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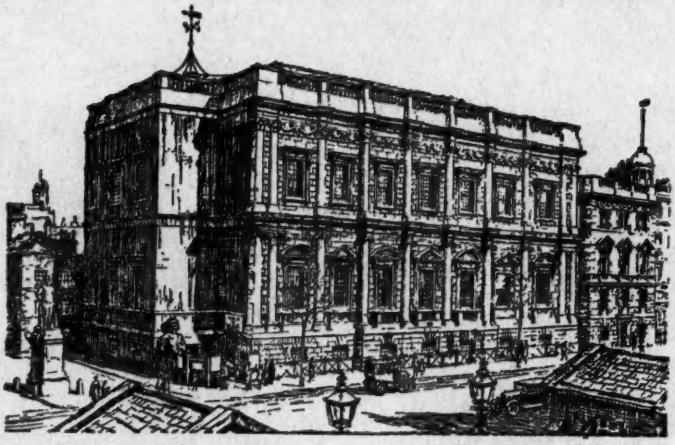

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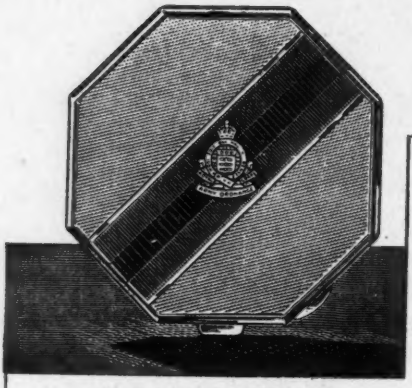

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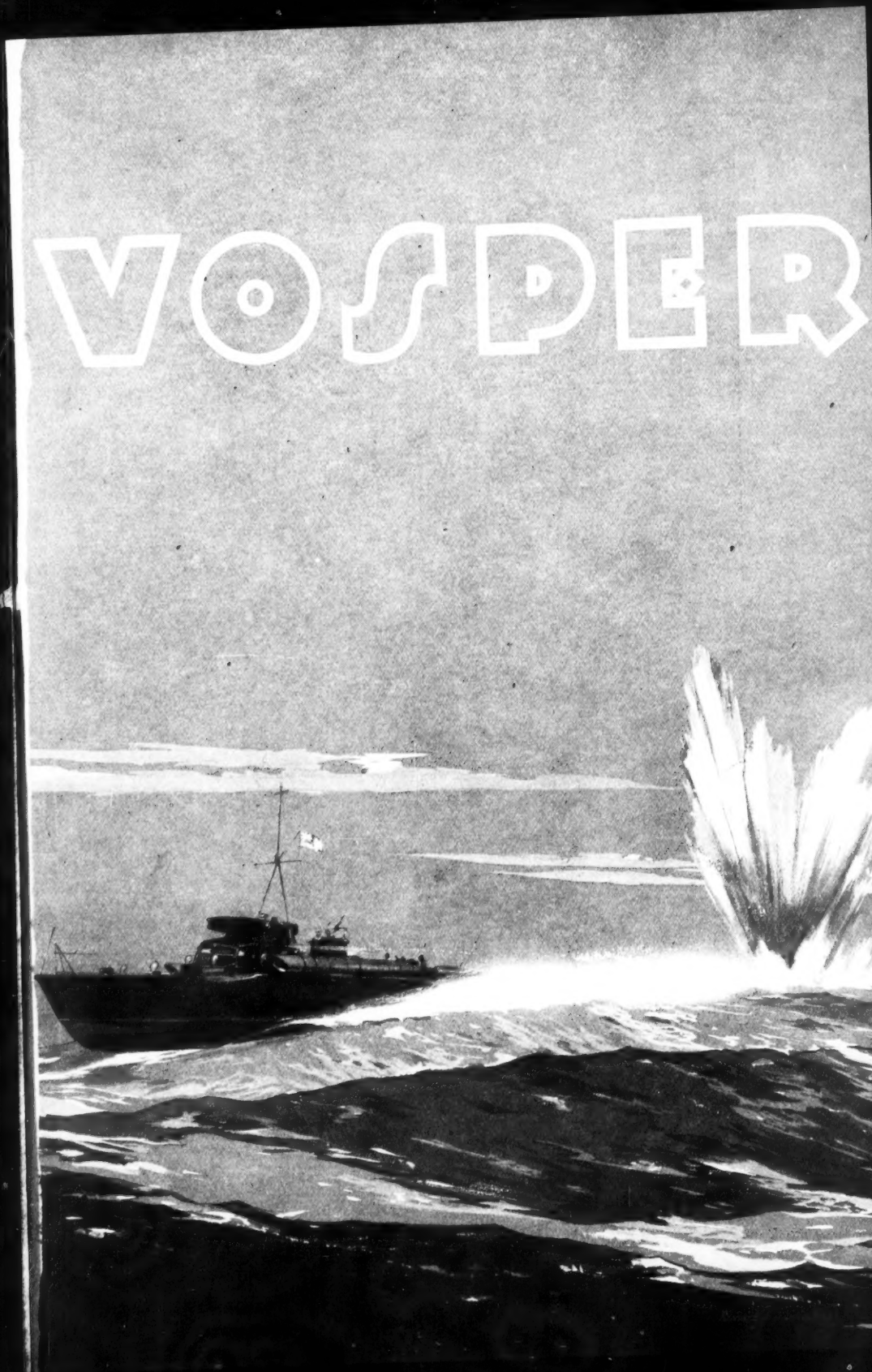
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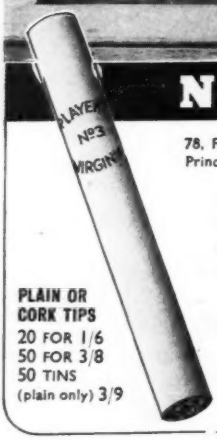

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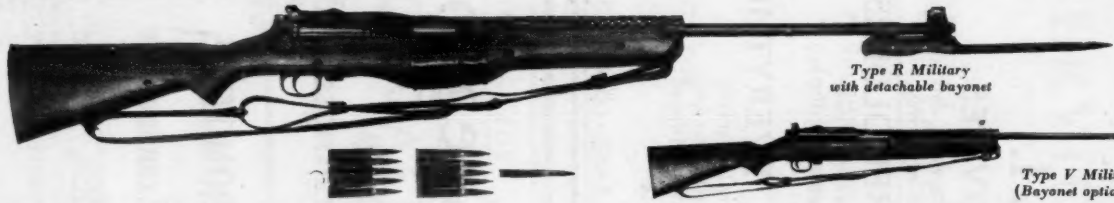

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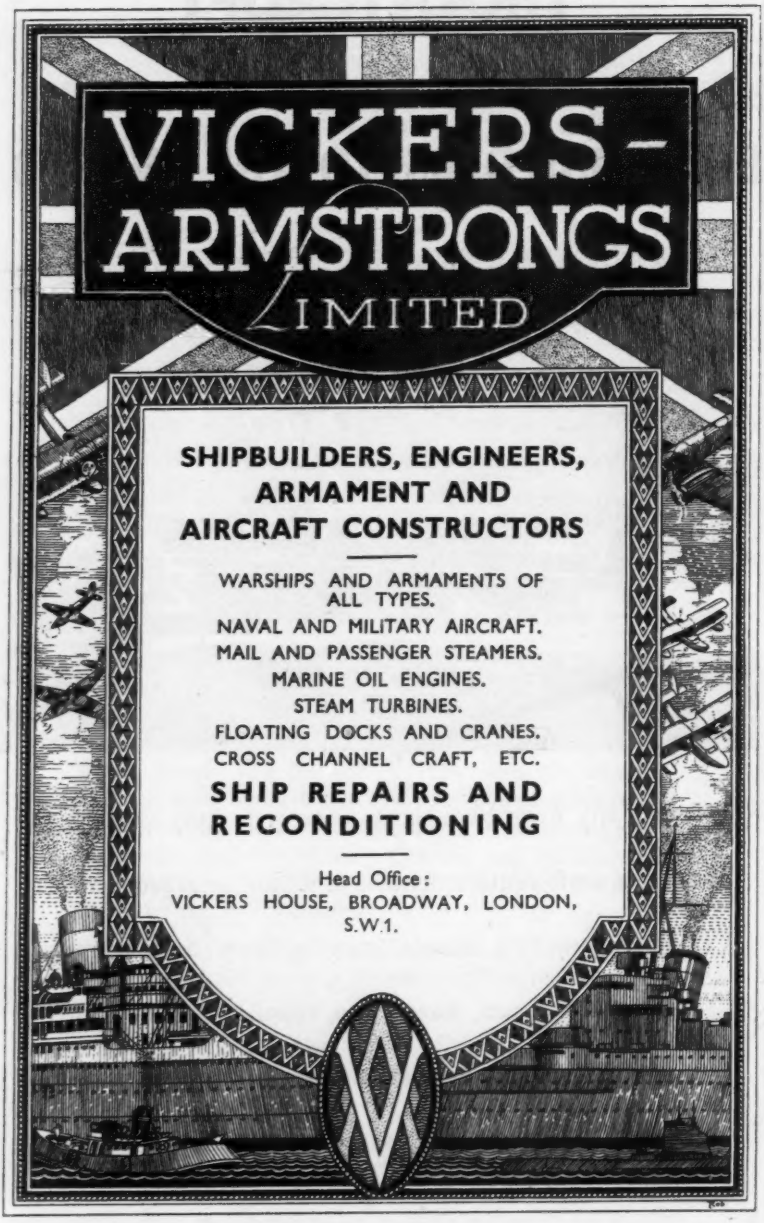
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WARTIME ARRANGEMENTS

THE INSTITUTION.—Circumstances permitting, the Institution will remain open during the War. Books can be sent from the Lending Library at the discretion of the Librarian.

All communications, except those intended for the Editor, should be addressed to the Secretary as usual.

THE MUSEUM.—To enable measures to be taken for the security of exhibits, the Museum was closed as from the 24th August last, and will remain closed for the duration of the War.

THE JOURNAL.—Members and subscribers will continue to receive the quarterly JOURNAL, which will be published as usual.

Retiring Members of the Council

The following Members, having completed three years service, retire :—

ROYAL NAVY

Admiral Sir Wilfrid French, K.C.B., C.M.G.
Admiral Sir William Goodenough, G.C.B., M.V.O.

ROYAL NAVAL RESERVE

Captain Sir David Wilson-Barker, Kt., R.D., R.N.R.

REGULAR ARMY

General Sir Felix Ready, G.B.E., K.C.B., C.S.I., C.M.G., D.S.O.

TERRITORIAL ARMY

Colonel J. K. Dunlop, O.B.E., M.C., T.D.

INDIAN ARMY

General Sir S. F. Muspratt, K.C.B., C.S.I., C.I.E., D.S.O.

ROYAL AIR FORCE

Air Vice-Marshal Sir Philip Game, G.C.V.O., G.B.E., K.C.B., K.C.M.G., D.S.O.

Elected Member

Lieutenant-General Sir B. N. Sergison-Brooke, K.C.V.O., C.B., C.M.G., D.S.O., was re-elected a Regular Army Member of the Council in the vacancy caused by the resignation of Major-General A. F. A. N. Thorne, C.B., C.M.G., D.S.O.

Ex-Officio Members

Major-General R. J. Collins, C.B., C.M.G., D.S.O., has succeeded Major-General B. C. T. Paget, D.S.O., M.C., on taking up the appointment of Commandant of the Staff College, Camberley.

Air Commodore A. P. M. Sanders has succeeded Air Marshal A. S. Barratt, C.B., C.M.G., M.C., on taking up the appointment of Commandant of the Royal Air Force Staff College.

New Members

The following officers joined the Institution during the period 30th October to 31st January.

ROYAL NAVY

2nd Lieutenant James Agnew, Royal Marines.
Sub-Lieutenant J. H. Adams, R.N.
Lieutenant G. R. G. Watkins, R.N.

ARMY

Brigadier The Viscount Downe, late The Green Howards.
Brigadier W. M. Ozanne, M.C., late The Duke of Wellington's Regiment.
Major F. B. Cowen, M.C., T.D., The Royal Northumberland Fusiliers.
Captain P. G. Heathcoat, 96th Field Regiment, Royal Devon Yeomanry.
Captain R. Maurice Hill, R.A.P.C.
Captain E. A. MacEwen, M.C., late 3rd Bn. (Reserve) Argyll and Sutherland Highlanders.
Lieut.-Colonel R. M. Rodwell, A.F.C., The West Yorkshire Regiment.
Lieutenant C. F. Battiscombe, O.B.E., R.A.R.O., Grenadier Guards.
Major J. E. Snow, R.A.M.C.
Major G. J. Yorke, 2nd Royal Gloucestershire Hussars.
2nd Lieutenant D. J. Penwill, The East Yorkshire Regiment.
Lieutenant P. M. Bennett, R.E.

ROYAL AIR FORCE

Squadron Leader F. R. Offord, R.A.F.
Wing Commander R. Pyne, D.F.C., R.A.F.

Trench Gascoigne Prize

The following subject has been selected by the Council for the Trench Gascoigne Prize Competition (Three Services) 1940 :—

" How have the lessons of the War of 1914–1918 been confirmed or modified by the experiences of the Present War up to date ? "

Particulars of the competition will be found in the leaflet enclosed in this JOURNAL, additional copies of which can be obtained on application to the Secretary.

No award of the Gold Medal of the Institution will be made during the War.

LIBRARY

Hours of Opening

The Library is open on Week Days from 9 a.m. to 6 p.m., except Saturdays, when it is closed at Noon.

JOURNAL

The Service Departments have signified that they will continue to give facilities for the publication of the R.U.S.I. JOURNAL, and serving officers are invited to offer suitable contributions.

Matter which might be of value to the enemy must, of course, be entirely eliminated ; but there is still ample scope for professional articles relating to former campaigns, especially the War of 1914–18, which might contain useful lessons at the present time ; also contributions of a general Service character, such as Strategic Principles, Command and Leadership, Morale, Staff Work, Naval, Military and Air Force history, customs and traditions.

MUSEUM

War Exhibits

Members and others interested in the R.U.S.I. Museum are asked to keep a look out for relics of the present war of very special interest and to arrange for them to be preserved in a place of safety pending the Museum being re-opened.

Considerations of space will inevitably preclude the acceptance of more than a limited number of small articles ; but the Council desire to ensure that the Museum shall continue to represent the greatest achievements of the Services, their commanders, officers and men, throughout the ages. Personal relics of special distinction will in future, as in the past, be particularly acceptable.

Additions

(9103) Model of a Bristol " Beaufort " multi-purpose aircraft.—Presented by the Bristol Aeroplane Co.

CHANGES OF ADDRESS

Members are particularly requested to notify any change of address which will affect the dispatch of their JOURNALS.

Such notifications should be received by the 10th of the month preceding publication ; i.e., by 10th January, April, July and October.

From the painting by Wootton. *By courtesy of Vickers Armstrong.*

THE FIRST BRITISH AIR ACTION OF THE WAR

THE RAID ON KIEL, 4th SEPTEMBER, 1939

THE JOURNAL
of the
Royal United Service Institution

Vol. LXXXV. FEBRUARY, 1940. No. 537.

[Authors alone are responsible for the contents of their respective Papers. All communications, except those for perusal by the Editor only, should be addressed to the Secretary, Royal United Service Institution.]

IMPERIAL CO-OPERATION IN THE WAR

DURING the past quarter the Imperial war effort has gathered momentum, and it has been made clear to the whole world that Germany has to reckon, not merely with Britain, but with the entire Commonwealth of British peoples. The following are some of the more recent activities in marshalling the sea, land, air and economic forces which are co-operating to secure victory.

NORTHERN IRELAND

True to tradition as part of the United Kingdom and Empire, Northern Ireland has responded magnificently to recruiting for all the Services.

Although the Province was excluded from the provisions of the Military Service Act, the recruiting offices have been kept busy since the outbreak of war, and occasionally they have been so overwhelmed with volunteers that it has been necessary to close them temporarily. In addition to three Regular regiments—the Royal Ulster Rifles, the Royal Inniskilling Fusiliers, the Royal Irish Fusiliers, and their reserves—an anti-aircraft Brigade was formed and is now on active service. An anti-aircraft regiment has also been raised, and recruiting is now proceeding rapidly for the North Irish Horse Light Tank Regiment. Territorial units of the Royal Artillery Coastal Defence and Royal Engineers were at establishment before hostilities began, and thousands of Ulstermen have found their way into other regiments, especially the Irish Guards. Older men, many of whom belonged to the famous 36th Ulster Division of the Great War, have found an outlet for their enthusiasm in the establishment of the 6th Royal Ulster Rifles National Defence Companies, and Companies of the Pioneer Corps.

The Ulster Division of the R.N.V.R. has been in existence for many years, and its members are now on active service, while large numbers of men are serving in other units of the Royal Navy and in the Mercantile Marine.

There is a strong Volunteer Reserve of the Royal Air Force in existence, and also a Reconnaissance Squadron, while other branches of this Service contain a liberal sprinkling of Ulstermen.

The Province is proud of the fact that in all the Services the total number of Ulstermen is said to approximate 100,000, and no less gratified that the two Corps Commanders of the B.E.F. in France—Generals Sir John Dill and Alan Brooke—are her sons.

Outside the fighting departments, Ulster's war effort includes a large aircraft factory, shipbuilding yards and various engineering and textile works.

On the land the Ulster government aims at securing an additional 250,000 acres under the plough, and of that figure 130,000 acres have already been obtained.

Ulster's first war Budget provides for a contribution of £2,000,000 to the British Exchequer for the first year of the war, and an Ulster Savings Certificate scheme has been introduced by which 75 per cent. of the amount subscribed will be lent to the United Kingdom Government for war purposes. If the response to the appeal for the purchase of these Savings Certificates were as good in the remainder of the United Kingdom as it is in Ulster, it would mean the raising of no less than £175,000,000 in a year in the United Kingdom.

NEWFOUNDLAND

The Secretary of State for Dominion Affairs informed the House on 7th December that in order to reduce the assistance required from the United Kingdom Exchequer by way of grant-in-aid, Newfoundland is making a financial contribution in the form of certain increased taxation, which has been framed so as to fall on those best able to pay. This financial contribution has received the warm approval of the public and the Press in Newfoundland. (See also Navy Notes.)

CANADA

The first contingent of the Canadian Forces landed in Britain on 17th December. They were greeted immediately on arrival with a message from the King which ran :—

" On behalf of this country I extend the warmest welcome to the first contingent of the Canadian forces to reach these shores.

" The British Army will be proud to have as comrades in arms the successors of those who came from Canada in the Great War and fought with a heroism that has never been forgotten.—GEORGE R.I.

An outline of the scheme for training flying personnel from the Dominions in Canada will be found in the Air Notes of this Journal.

AUSTRALIA

Mr. Menzies, the Australian Prime Minister, in a broadcast review of the Commonwealth's war effort, said that when the Militia training was at its peak and the special division was at full strength, there would be more troops in camp than ever before in Australia's history. The Minister for Defence has stated that the Militia were due to be equipped with the most modern armoured-car units by the end of 1939, and that all artillery batteries would soon be mechanized.

Compulsory military training, abolished in 1929, has been reintroduced. The first draft, of single men reaching the age of twenty-one on 1st July, 1940 were called up in January. Service abroad will be voluntary; but Mr. Menzies, in announcing this important change, remarked: "With the prospect of a long struggle against a powerful and well-organized enemy, Australia must make her full effort. Victory can be achieved only if the British countries, with France, are able to exercise military power and economic strength and display a spirit of resoluteness superior to those of the enemy."

The plan for an Australian expeditionary air force, mentioned in last quarter's JOURNAL has been abandoned in favour of the earlier formation of an Australian general reconnaissance squadron for service in and about Great Britain. Three of the nine Short-Sunderland flying-boats ordered by Australia are already manned by her own personnel, and 17 officers and 166 airmen have arrived in Great Britain to man the remaining six. This squadron of nine flying boats will be the first Dominion air force unit on active service in this war.

In future it is intended to concentrate on the Empire air training scheme to be carried out in Canada. When, on 5th January, it was announced that Air Marshal Sir Charles Stuart Burnett was being lent from the Royal Air Force to become Chief of the Australian Air Staff, Mr. Menzies said that his experience would be most valuable "in organising Australia's huge task of a five-fold increase of the R.A.A.F. under the Empire scheme."

Details of the expansion of the Royal Australian Navy will be found in Navy Notes.

NEW ZEALAND

The first batch of 21, out of the annual quota of 650 pilots being trained under the pre-war agreement with Great Britain, passed out of the R.N.Z.A.F. Training School at the end of November. The Minister of Defence, Mr. F. Jones, has stated that New Zealand will be able to send over 1,300 pilots, observers, and air gunners annually. Any number of men are offering themselves for the Air Force.

The Government has appointed a Central Advisory Council, with the Minister of Man-power as president; other members are representatives of the Primary Production Council, the Factory Production Council, and the Industrial Emergency Council of the Armed Forces. The functions of the parent Council are to enable the Government not only fully to meet their undertakings with regard to the armed forces, but also to assist the United Kingdom with the maximum production of foodstuffs and other essential commodities.

UNION OF SOUTH AFRICA

Semi-official messages from Pretoria, says *The Times* of 7th November, indicate that never before has there been such a spirit of enthusiasm and brisk efficiency in the fighting forces of South Africa. South Africa is preparing with the utmost seriousness for a possibly active share in the war. Recruiting to bring all Active Citizen Force units up to war strength (which involves doubling their peace-time strength) has made great progress, and there is no lack of volunteers. Intensive training of Active Citizen Force units has been extended, and specialists in all technical departments, such as signalling, despatch riding, machine-guns, Bren guns, etc., are undergoing courses at the South African Military College near Pretoria.

Adequate arrangements for the coastal defence of South Africa have been made. The Special Service Battalion (which normally recruits youths who combine military with vocational training) has been increased to the strength of a brigade, and a second brigade is to be formed.

Special training schools for airmen are being established in various parts of the Union. There is intense activity in the Ordnance Department.

This enthusiasm for the Allied cause is not confined to the white population. *The Times* of 25th November reports that some 300,000 native mine-boys on the Rand have clubbed together to contribute 1s. a month to "buy a battleship". They held a special "indaba" to obtain all opinions. At first they were discouraged by the thought that the cost of a battleship would mean £2 or £3 a piece, and it was suggested that their money should go to the South African Mayors' National Food Fund instead. But this proposal was soon outvoted; they were all anxious to help sink the U-boats, and thus keep the "big enemy" away from South Africa and their *kraals*. As they are told the war may last a long time, they hope that perhaps their battleship will arrive when the Empire needs it most.

Nazi rule, it is evident, does not appeal to the natives of South Africa.

The chairman of the National Committee—Mr. J. Page, has handed a cheque for £100,000 from the South African Mayor's Fund to the British High Commissioner—Sir William Clerk, as a Christmas gift to

the British Government. Mr Page said that he hoped this was the first instalment of some millions to come, and asked that it might be handed over " with our heartfelt good wishes for early victory."

(See also Navy Notes).

INDIA

Sir Muhammad Zafrullah Khan, who represented the Government of India at the discussions in connection with the war between Dominion Ministers and his Majesty's Ministers in London, has issued a statement in which he said :—

" The full force of India's contribution in the present war will not be felt at once, but her immediate steps disclose something of the immense reserve power. India maintains in peace-time a standing army of 150,000 of all arms, excluding British troops stationed in that country, and in war she has a vast reserve of man-power to draw upon. The Army is being steadily expanded and pilots and mechanics for the Air Force are for the first time to be recruited, commissioned, and trained in India. The recruiting offices have been so overwhelmed with volunteers that the authorities have had to cry a halt and explain that it is impossible to utilize all offers of service at once. Significantly, too, these offers of service come from every class, community, and walk of life.

True to their tradition of loyalty and service, the Indian Princes have offered their all. No fewer than 300 of them have personally signified to the Viceroy their eagerness to help in every way. Their collective territories cover one-third of the whole area of India, and among their 90,000,000 peoples are some of the greatest of the fighting races of India. Tradition is still strong, and in spite of all the changes of the last twenty years, the Princes exercise an influence which is felt far beyond the confines of their territories. . . .

India, in unison, has denounced Hitlerism in unqualified terms and has resolved that its menace to world peace must be destroyed. India's war effort is the measure of that determination."

The first contingent of Indian units arrived in France to join the British Expeditionary Force during the latter part of December. It included a large number of pack and draft mules.

The formation has been authorized of five new battalions of the Indian Territorial Force ; three will be recruited in the Punjab, one in the Bombay Presidency and one in the Madras Presidency. The new units are part of a scheme of war expansion of the Indian Forces announced when hostilities broke out.

An addition to other numerous and generous gifts from India is the offer by the Nizam of Hyderabad and Berar of a monthly contribution

of Rs. 1½ lakhs (£11,250) towards the cost and allowances of the Hyderabad State Forces, both cavalry and infantry, which may be called on for service outside the State. He has also made a cash contribution of £100,000 to the Air Ministry for aerial warfare.

The Nizam gave a similar sum for anti-submarine warfare in 1917.

RHODESIA

The Government of Southern Rhodesia has offered to maintain three air squadrons from that colony in the field on any front.

MALAYA

The Colonial Office is discouraging men from leaving the Colonies to join the fighting Services at Home, and this has caused some disappointment in the Straits Settlements and Malay States; but the Governor and High Commissioner, Sir Shenton Thomas, has emphasized that their most valuable contribution to the Imperial war effort will be in the economic field. Malaya can provide the Allies with certain essential raw materials, notably rubber and tin; surplus supplies will be sold to friendly neutrals to increase the amount of foreign exchange at the disposal of the British Government.

Local defences are already in good order, and the Governor has described Singapore as a "veritable hornet's nest of aircraft, and crowded with troops."

TRINIDAD

On the other side of the world, the gift of $1,000,000 to Britain's war fund by the Trinidad Legislature is an example of the loyalty and patriotism of people of all races within the Empire.

When a naval volunteer unit was being raised, five times as many men as were required applied to be enrolled.

VISIT OF OVERSEAS MINISTERS AND REPRESENTATIVES

Speaking in the House, on 2nd November, Mr. Chamberlain said:

"We have had in the last few days a striking demonstration of the united determination of the Empire. From Canada, from the Commonwealth of Australia, from New Zealand, from the Union of South Africa, and from India have come Cabinet Ministers and representatives who have travelled thousands of miles in order to make personal contact with Ministers in this country and to see with their own eyes the gigantic efforts in which we are engaged. Discussions with these representatives have already begun, and we are considering with them how best to co-ordinate the contribution which each of us can make to our common

task. The Empire has already shown how generous and wholehearted is its spirit of co-operation. The fuller knowledge which we shall now gain of the plans of the different Governments as a result of the presence of their Ministerial representatives here will be of great value to us. And in their turn we are confident that the Dominion Governments and the Government of India will find that the first-hand impressions of their representatives will afford them invaluable aid in gaining a fuller appreciation of our common problems, and of the best and quickest means of solving them."

THE COLONIES EFFORT

In the same speech the Prime Minister said: "Equally striking is the wholehearted co-operation that we are receiving from all parts of the Empire, including Burma, and from the Colonies. I have expressed before, on behalf of his Majesty's Government, our great appreciation of the spontaneous messages of support which came immediately after the outbreak of war from every single territory of the Colonial Empire. We did not ask for these messages: the Colonies have not been forced into war by Great Britain against their will. The action of so many peoples of various races is a witness to their consciousness that a threat to Great Britain is equally a threat to that freedom and well-being which has been assured to them under British rule.

"Although at the beginning the war effort of the Colonies will be mainly on the economic side, and every Colonial Government is doing its utmost to help us in the organization of supplies of essential raw materials and foodstuffs, I should like to refer with gratitude to the numerous offers of personal service from residents in the Colonies. It is the intention of his Majesty's Government to employ the man-power of the Colonial Empire as may be most effective, and plans for doing this are being worked out. In many cases openings are already being provided in locally raised units. For example, in Africa the strength of the Royal West African Frontier Force has been more than doubled, and that of the King's African Rifles in East Africa, more than trebled; and, in fact, the voluntary offers of service throughout the Empire have far exceeded our immediate requirements. As announced some time ago, British subjects from the Colonies and British protected persons who are in this country, including those who are not of pure European descent, are now placed for entry into the armed forces on the same footing as British subjects from the United Kingdom.

"Such is the nature of the help we are receiving from the Empire. Eagerly offered and gladly accepted, it is a splendid example of free co-operation and ungrudging self-sacrifice in a noble cause throughout the lands which owe allegiance to the King."

FIRST TRENCH GASCOIGNE PRIZE ESSAY (MILITARY), 1939

By Cadet-Captain E. G. Mandeville Roe, R.A.

SUBJECT:

"The development of air forces has increased the burden imposed on Home Defence. Discuss its effects on the role and organization of the Regular and Territorial Forces in the event of a major European war."

Motto:

"The perdition of th'athversary hath been very great; reasonable great."—(*Henry V, Act iii, Sc. vi*).

SINCE the work on this essay was begun, the march of history has overtaken the speculations of theory, and events have already commenced to supply answers to the problem proposed. The growth of the air arm has now become sufficiently pronounced to affect in a varying degree all operations of war, and it has therefore passed from the purely tactical to the strategical sphere. It will therefore be most convenient to examine the changes which have been produced in these two spheres, and to consider first the tactical. Compared, however, with the progress achieved between 1914 and 1918, very little has been made since. In 1914, the only function of aircraft in the field was reconnaissance. Airships, it was soon proved, were too vulnerable to employ there, but their existence constituted a threat of attack against back areas and peaceful industrial centres similar to that of the bombing aeroplane to-day. By 1918, airships had been superseded in the main by heavier-than-air machines, the functions of which embraced much more than reconnaissance. They included long-distance bombing, low-flying attacks upon troops, ships and other objectives, observation for artillery bombardment, photography, and combat action against enemy flyers. Warfare had found its wings.

As far as land armies were concerned, the air had become a third flank, a flank in some respects more vulnerable than either of those on the ground. This necessitated the creation of special forces to protect the exposed flank, and brought into existence defending fighter squadrons and searchlight and anti-aircraft gun units. It is clear that these latter troops, having to be spread over a network of vital spots in the back areas, could exercise no direct influence upon the success of an attack, but, on the other hand, the low-flying aeroplane, the "trench-strafer,"

could very materially assist. To-day the changes are a matter of degree rather than of kind. There is only one notable addition to the power of the air since 1918, and that is the formation of parachute-troops. Unknown in the last war, parachute-infantry are as yet little advanced beyond the experimental stage ; their effect in the field is merely to enhance existing influences. As they develop they will necessitate the retention of greater numbers of defending forces in the localities they are likely to attack. It will therefore be seen that warfare has not entirely begun at the point where it left off in 1918. The great question which remains unsolved even now is whether an army not possessing air superiority can conquer an enemy who has it. Alternatively, is power in the air sufficient by itself for the achievement of victory ? It is easier to answer the second question than the first. It is a question of relative strength. Ground defence could be made sufficiently powerful to defeat air attack.

The Effect of Air Superiority

In Abyssinia, wholesale bombardment from the sky was shown to be effective against native races, even where they had certain European weapons and a degree of training. But the operations in Poland have decisively demonstrated that aeroplanes by themselves, however intensively employed, are not sufficient to secure the defeat of a field army. Had they been, the Germans could, in theory at any rate, have withdrawn their divisions earlier and thrown them into the Western Front, leaving the Polish forces to be dealt with by the air force alone.

One important difference between war in 1914 and in 1939 was established in Poland. Where two land armies are engaged in war, the possession of air superiority by the attacking side can be a deciding factor. Air power, in fact, emphasizes and exploits the attack. Perhaps its most potent use is for the purpose of preventing an enemy from rallying once he is in retreat. The general effect of the employment of air power in these circumstances is one of acceleration.

As to the other question, no circumstances have yet occurred to show that an army not possessed of air superiority can conquer an enemy who has it. Clearly, very powerful ground anti-aircraft defences would be necessary, and one is entitled to assume that they would have to be so strong as to weaken materially the forces available for ordinary military assault. In conclusion on this point we may say that air power alone is not at present a decisive factor, but in conjunction with others it can be.

The rivalry between air force and ground defence is governed, and will continue to be governed, by the relative period of time taken to train an aeroplane crew and a ground anti-aircraft crew, whether for guns or for lights, as this, in its turn, fixes the relative rate of wastage by casualties

which each can afford. We have reduced things to a question of pure attrition. The simplification of the problem into a contest between air forces and ground defence is unlikely to occur in European warfare, at all events at the commencement of a campaign, since the defence will invariably possess some fighter machines which can be used to supplement guns on the ground. They can only be eliminated by casualties, and their replacement prevented by air attacks upon factories, or by blockade preventing the importation of aeroplanes and their components. To ensure their safety, aircraft factories are usually situated as far as possible from a fighting area. With many countries, however, it is not possible to carry out this policy, or it is only possible to carry it out in part ; in such cases, a vital industry becomes vulnerable to hostile attack. Other equally important places, of course, such as munition works, oil refineries and mines, may be similarly situated. Mines are an example of the type of industry which cannot be moved from its peacetime location.

Attacks on such centres as these are very clearly hedged about with the limitations of international law. Mr. Philip Landon, M.C., M.A., lecturing on the legality of aerial bombardment at the Royal United Service Institution on the 2nd March, 1938, laid down two fundamental principles : (*a*) that war is between the fighting forces and not between the civilian populations, and (*b*) that the lives and security of non-combatants are sacrosanct. The doctrine of totalitarian war, if carried to its logical conclusion, as expounded by its greatest advocate, Ludendorff, calls for the mobilization of a nation's whole personnel and services for war purposes, and therefore eliminates all civilians as such for the duration of the war. Intimately connected with this is the German theory of the *Blitzkrieg* or lightning war, which concentrates its whole attention upon the aim of delivering a paralyzing blow at the commencement of hostilities. The German attack upon Poland in 1939 commenced in this way, without a declaration of war in the proper sense, but the suddenness and ferocity of the attack was not sufficient to prevent the Poles from fighting a spirited campaign of several weeks' duration.

The element of surprise, the supreme tactical advantage of aircraft, was being used here to the full. The importance of this factor, which has grown out of all knowledge since 1918, can scarcely be over-estimated. The defence must always be in a state of uncertainty until an attack is actually delivered. The initiative remains with the attacker. Here, again, the answer seems to lie in the power and numbers of the ground defences ; they must be ready to do battle with the enemy at any point he may select. This obviously demands two conditions : (*a*) large numbers of troops and weapons for ground defence, and (*b*) adequate allocation of ground protection to every vulnerable target.

A Military Air Arm

Clearly, the functions of defending aircraft and of guns and lights on the ground are too closely associated to be under separate control. To attain their maximum value they must be properly co-ordinated, and that is best achieved through unity of command. This is but one aspect of a strong case which exists in favour of taking away from the Royal Air Force certain formations and creating a Military Air Arm very much on the lines of the Fleet Air Arm. Such a Military Air Arm would not be solely confined to problems of defence against attack, although here we are concerned only with that aspect of its functions, but it is not altogether irrelevant to refer in passing to the type of organization between ground troops and aircraft which might then be expected to exist.

While the principle that every unit is responsible for its own immediate protection would be maintained, all but the smallest of ground anti-aircraft formations would figure as divisional troops, and aircraft would appear in four principal capacities. These would include the duties at present discharged by the Army Co-operation Squadrons, R.A.F., and may be summarized as (*a*) infantry aeroplanes, used for low-flying attack in conjunction with infantry, and coming under the direct orders of the infantry commander, (*b*) artillery aeroplanes, allocated to field, medium and heavy regiments, Royal Artillery, and also to Coast Defence Artillery, on the lines of the " Flying O.P." recommended by Captain H. C. Bazeley, R.A., in the " Duncan " Essay for 1938–39 (*Journal of the Royal Artillery*, Vol. LXVI, No. 3, October, 1939), (*c*) balloon barrages, and (*d*) liaison. Aircraft under this last heading would be controlled by Army or Corps, and only allotted to lower formations if required. The general tendency in warfare on land, therefore, has been to take troops away from the offensive function and compel them to be devoted in ever-increasing numbers to the role of defence.

Air Attacks Upon Ships

Let us examine what has happened at sea, since this is a very important question for an insular nation. It will be remembered that when the late Viscount Grey of Fallodon was told that Blériot had crossed the Channel he exclaimed, " Then Britain is no longer an island ! " This remark was, of course, prophetic rather than factual. Has the prophecy yet been realized, or is realization still to come ? The answer to this must govern very largely our arrangements for home defence.

Reverting for an instant to the purely naval side of the matter, we find that the use of aircraft has gone very far to destroy the element of surprise where the employment of surface ships is concerned, except in conditions of bad weather or low visibility. Two circumstances about

the Battle of Jutland are of importance to remember, even to-day. The Grand Fleet was accompanied by a converted cross-Channel steamer from which observation-balloons could be flown, but it was decided not to use a balloon as its presence in the sky would probably be detected before the Grand Fleet itself became visible to the enemy. On the morning after the battle, the Grand Fleet was sighted by a German airship, which enabled the High Seas Fleet to escape to its base. The difference to note is that the observation-balloon, having to be flown from a ship, would betray the presence of the ship, whereas the Zeppelin, flying free, could observe without disclosing the position of the fleet for which it was operating. To-day the functions of the observation-balloon and the airship have been taken over by aeroplanes working from their floating aerodromes, the aircraft-carriers. Both sides can now use their " eyes " in the sky. This goes a long way towards minimizing the dangers of submarine attack on surface ships.

We cannot yet draw conclusions as to the value and effect of aerial attack upon ships. While the Royal Air Force seem to have blown the " Gneisenau " in half in the raid on Kiel, at the time of writing Great Britain has been uniformly successful in repulsing all air attacks upon ships except in the cases of H.M.S. " Mohawk " and " Southampton," affairs not to be compared in magnitude with that of the " Gneisenau." Ships are clearly capable of putting up a powerful defence against air attack, a circumstance which seems to indicate that naval warfare is very much in the " as-you-were " position, with surface ships being compelled to engage one another if any decisive result is to be achieved.

Aircraft are of undoubted value to-day in coast defence, since they can patrol hundreds of miles out at sea, covering vast areas, and thereby give ample warning of the approach of hostile naval attacks. Owing to the speed of air operations, however, to intercept air attacks requires very large numbers of defending aircraft. The old principle of aerial warfare remains therefore unaltered : that however strong the defences, some attacking aircraft will always find their way through. This does not involve any fundamental change in the tactical defence of our island ; it remains true to describe it as an island, and as long as the Royal Navy continues to dominate the sea, the island will remain unconquerable, although not unassailable.

It is an axiom of land warfare that there can be no conquest without consolidation. Up to the present this is true also of the air. A victorious air force, undisputed master of the sky, cannot lay claim to have conquered its foe until it has landed troops or police to take possession of and administer the enemy territory. It has long been recognized that this applies to sea warfare ; the Royal Navy by itself could never have

conquered Louis XIV ; it was necessary to send an invading army under the Duke of Marlborough. Similarly, it was not Nelson's victory at Trafalgar in 1805 that destroyed Napoleon, but Wellington's at Waterloo ten years later. The Navy could not occupy Paris ; the Army could. You cannot claim to have conquered your enemy until you have garrisoned his country. The advent of air power has raised an alternative ; perhaps one day it may be possible to turn an adversary's territory into a flaming desolation from frontier to frontier, as prognosticated by H. G. Wells in his highly prophetic novel, *The War in the Air*, which appeared before the 1914–1918 War.

The "Third Flank"

This brings us to the consideration of the strategical effects of air power which arise from the purely tactical. Side by side with limitations we have certain advantages. All operations nowadays must take into account the vulnerability of the "third flank," with the consequent exposure of back areas and lines of communication. Against this has to be set the fact that air power can itself be used to form new lines of communication, thereby giving far greater freedom and elasticity of movement. In fact, if this facility is logically and fully developed it should ultimately mean that the only definitely vulnerable objectives are those too cumbersome to move by air. A line of communication through the sky is far more difficult to intercept, even given the advantage of air superiority, than is a line of communications on the ground. Whereas one bomb explosion may wreck a railway line and prevent all trains from moving any farther until repairs are effected, the interruption of aerial communications entails the necessity of a ceaseless patrol capable of pouncing upon and destroying every hostile machine which attempts to use the route.

The first indication of what might be expected to develop in this direction came when the late General Townshend was besieged in Kut-el-Amara, and the relieving army—which failed to reach him—dropped sacks of flour from aeroplanes. A military tutor remarked at the time, "Maguire's *Military Geography* will have to be rewritten." Air communications, in short, have this in common with those by sea, that they are not fixed, but can be varied, unlike roads and railways, which must "stay put." Air routes, therefore, become a legitimate military objective ; if, for example, Great Britain took delivery by air of aeroplanes manufactured in Canada, an enemy would be entitled to attack them.

Air Attacks upon Civilian Morale

The great strategic factor where air warfare is concerned is the morale. Can civil populations be so cowed by the fear of air attack that

they compel their fighting forces to cease resistance? This question has not yet been put to the test of actual warfare. There are certain indications, however, that the panicmongers may be on the wrong tack. The first extensive use of aircraft for strategic attack—that is for destroying the will-to-war—was when the Germans employed airships against Great Britain in 1915. These raids were subsequently intensified and finally replaced by aeroplane bombing. Their effect is best summed up by the late Lord Kitchener's remark that the Zeppelins were as good as another hundred thousand men to him. The same general tendency manifested itself during the Spanish Civil War of 1936–1939. Bombing, far from cowing the spirit of resistance, imbued it with a fiendish desire for revenge. In the German attack upon Poland in 1939, it was air attack upon military concentrations rather than those upon civilians which led to the collapse of Polish effort. When Warsaw capitulated, food, water and ammunition were almost exhausted, and the lighting, sewage and sanitation systems had been destroyed, which last circumstances meant that victor and vanquished alike stood in danger of pestilence.

Attack upon civil populations is definitely forbidden by international law; this applies to all forms of attack, and not merely those which may be delivered from the air; it is an old principle, generally recognized among civilized peoples, universally practised in the nineteenth century except where revolutions were concerned, and not seriously challenged until the air raids of 1915–1918 by Germany and the advent of her unrestricted submarine campaign. The legal aspect of the indiscriminate employment of air power was thoroughly expounded by Mr. Philip Landon, M.C., M.A., in a lecture on the legality of aerial bombardment delivered at the Royal United Service Institution on 2nd March, 1938. His view, briefly stated, was that munition centres and communications such as roads and railways are legitimate targets only if they can be attacked without endangering non-combatants.

This doctrine in the year 1939 unfortunately sounds too idealistic to be respected, since it is in flagrant conflict with the ideas of totalitarian war, and with the conceptions of Clausewitz upon which totalitarian warfare is based. The object of attacking lines of communications is to cut off the fighting forces from their supplies, a process achieved in bygone days either by naval blockade or by outflanking movements on land. Can attack from the air be sufficiently powerful and sustained to sever an army from its base? This is a question yet to be put to practical trial, but one thing can be stated before that happens: It is clear that if the conditions imposed by international law upon aerial attack are to be observed, then an army cannot be cut off by that means alone.

Defence of Industrial Areas

To comply with international law, it would be necessary to evacuate all civilians from industrial areas—a manifest absurdity, since without them war manufactures could not be carried on. The alternative is to enlist and attest all labour and treat it as part of the fighting forces. The recent creation of the Pioneer Corps in the British Army, and the enlistment of dockers, are two circumstances which seem to point to the second course as that which is most likely to be adopted in this and in future wars. Without some such step it would clearly be possible, under the protection of international law, to shield arsenals, dockyards and other vital spots from attack on the simple ground that they are embedded in densely residential areas. It is a logical process of economics that every factory ever built soon gathers round itself a cluster of workmen's dwellings.

We have to anticipate a situation in which international law on these matters may not be observed, however, and this brings us to the specific problem of the increased defence of back areas. In Great Britain the problem is unique, by reason of our geographical situation and our proximity by air to countries either potentially or actually hostile. The ocean which an enemy has to cross in order to reach these islands has ceased to be a protection to us ; in some ways it has rendered us more vulnerable, and thereby imposed an added burden upon the defence.

In order that enemy aircraft may not take us by surprise, it is necessary that the North Sea should be extensively patrolled so that raiders may be engaged and if possible destroyed or turned back before they reach these shores, and that warning may be given as early as possible of their presence. The efficient execution of this patrol is an advantage to us, in that defensive engagements can take place without the slightest danger to civilian life or property. There is, however, always the possibility that enemy machines may arrive unheralded upon our coast, which means that the first warning to the defence is when they make their landfall, a fact which gives very little time and necessitates that the defence must be constantly on the *qui vive*.

The movement of aircraft is so rapid that it is at present quite impossible to rush ground defences to meet a threatened attack. This calls for large numbers of troops, guns, lights and barrage-balloons, so that wherever the enemy may attack he shall be met by an adequate defence. The first factor we have to consider, therefore, is that the threat alone of air attack is sufficient to " contain " a large part of our forces. The second is the magnitude of the attack for which we must be prepared. Political influences at present seem to indicate that wholesale bombing is unlikely, since the Germans very rightly fear reprisals from our own

Royal Air Force. But we are considering purely military possibilities, and therefore so long as we know that the enemy possesses a large fleet of bombers we must be ready in case he should use them against us.

Thus, since we must anticipate aerial assault on a scale hitherto unprecedented in history, we cannot justifiably conclude that its effects will merely be similar to those of air attacks which have taken place either here or elsewhere in the past, only larger in size. In the War of 1914–1918, air raids served but to stiffen the will-to-war of the people raided, but we must assume that there is a point at which aerial assault, like bombardment by gunfire, will break down the spirit of resistance. The only indication we have had of what may happen in such a case is where aerial attack has met with little or no defence, as in Abyssinia and in the later stages of the Polish campaign. The answer to this lies in national discipline, which in its turn depends very largely upon the morale of the civil population and upon the racial characteristics of the people. The English are a most individualistic type and therefore not readily or rapidly disciplined, but on the other hand they are traditionally phlegmatic. From the military point of view, it is essential that during an air attack the civil population should maintain order and keep out of the way. The service of Air Raid Wardens, organized to deal with this and other problems, is likely, however, to have a very difficult task when numbers of people are herded together in underground shelters, since those are the very conditions in which mass hysteria is most likely to occur. Once a panic starts, it may spread from the civil population to the troops, and when that happens resistance will soon cease. Before that stage is reached it will have disorganized war industries. One of the most serious effects of the air raids in the 1914–1918 war was found to be the lack of sleep resulting from continuous alarms in the night. The efficiency of workmen declined noticeably, see *Official History of the War in the Air* by Sir Walter Raleigh and H. A. Jones. On one occasion at least the anti-aircraft gun-crews of London's defences were dangerously near complete physical exhaustion. This latter story is given in detail by Commander Rawlinson in his book, *The Defence of London*; he states that after standing-to and fighting on successive nights his men were engaged by day in off-loading more ammunition, as the stocks at the gun-positions were almost completely dissipated by the raids at night.

Unity of Command

At present the Commander-in-Chief for defence against aircraft has very little authority over those forces which are really the most important of all, those which govern the moral factor. The only thing he has to do with Air Raid Precautions is to decide whether or not the sirens may be sounded. He has no jurisdiction after that until he orders the " Raiders

Passed" and "All Clear" signals. This situation has arisen from political motives. The characteristic individualism of the English causes them to hate being "militarized," as they call it, and their distaste is a tradition which goes back to the days of Oliver Cromwell, and was strengthened by the fact that for years after the Restoration the army was recruited from the worst social elements and was by some regarded as the only alternative to prison.

From the point of view of efficiency, it cannot be questioned that a complete unification of all forces and personnel dealing with air defence, whether active or passive, is preferable to the present system. To take but one example, a certain local authority received during the 1938 crisis orders from the Home Office to put into effect the Air Raids Precautions scheme. The orders—if such they can be termed in connection with the civil side of defence—were contained in an ordinary letter, not even registered, sent through the post in the usual way and despatched on a Saturday. As a result of this they were not opened until the ordinary municipal mail was sorted on Monday, and bearing no mark of urgency, did not reach the Air Raids Precautions Officer until midday! This case was quoted by Major-General Sir George Jeffreys at a meeting at the Royal United Service Institution. Had the original organization of civil defence been in the hands of the fighting Services one can readily imagine what would have been done. A single code-word, despatched by telegram to every Air Raids Precautions authority, would have had the whole country ready in a matter of less than hours.

Passive Defence Divisions

How, then, can we best reorganize our defence against air attack? Now is the time to do it, while things are fairly quiet and public support is likely to be behind any steps taken. In the first place we have unified command. That command must extend over every detail of defence against aircraft; where there is a superfluity of A.R.P. workers the Commander-in-Chief must have the power to dispose of the surplus wherever he finds they are needed; if Harrogate and Worcester had between them a hundred wardens above establishment, and Whitechapel was short-handed, then the Commander-in-Chief should be able to remedy the deficiency in the one place from the abundance of the other. To take the whole of the civil Air Defence system into the forces does not involve so radical a change as might be imagined. Internally the A.R.P. services would differ little, but the power to utilize them would be greatly increased, since they would come under one authority without the intervention and delay of innumerable Borough Councils and Committees. It would be quite easy to form the A.R.P. personnel into

Divisions, and there would be a Passive Defence Division to each Active Defence Division, the two together forming one Anti-Aircraft Corps. The feeding and maintenance of the whole would be very much simpler than it is to-day, and so would the question of pay and allowances. The civilian ambulance service at the moment is ripe for conversion into R.A.M.C. units. Where, in the past, the enthusiastic amateur has had to perfect his organization by trial and error—and is often still far from his goal—the transport arrangements could be greatly improved by the introduction here and there of a few officers and instructors from the R.A.S.C.

An advantage which the bulk of A.R.P. personnel would appreciate is that, on the reorganization taking place, they could enlist "for duration," instead of remaining, as nearly all of them are to-day, civil employees engaged on a weekly basis. There would be a corresponding advantage from the point of view of the national interest. At present the A.R.P. service has practically no opportunities at all for promotion, and those who were in it at the beginning mostly remain in the posts they held then because the senior posts are already filled and the highest official in the whole hierarchy is the Air Raids Precautions Officer. There are many efficient and capable people working in obscure positions in the A.R.P. services, some merely as drivers or stretcher-bearers, who could be very much more profitably employed in positions more suitable to their talents. The Army, and the military system generally, has throughout human history been the best method known to us for discovering and using the services of clever men. Napoleon's much-quoted cliché about the baton in every man's knapsack has always been true in varying degrees. To bring the A.R.P. services under military or air force control would make available much new talent which the fighting Services can ill do without; however many there are already, there is always more room for capable men. In addition to this, one finds that there are certain men in the A.R.P. services whose rightful place is or should be in the fighting Services; to enlist them now would save a lot of reorganization at a later date.

Road Control

Another vital change is that the control of the national road-system should come under the Commander-in-Chief for Air Defence. This may sound unusual, but it is a lesson which the experience of the last war teaches. There is a limit to the ammunition which can be stored at gun-positions, and we must never be in danger of such a situation as that already mentioned (page 16 of the present paper), when a succession of raids almost completely drained the stocks of some batteries. There is

another reason why the roads must be controlled. At present, in the event of an air raid, we have ambulances, stretcher-party cars and fire-pumps all rushing to the scene of an " occurrence." While the ambulances and stretcher-party cars come under the same command and draw their routes from the same source, the Fire Brigade and the Auxiliary Fire Service do not. If we add to this something which happened in a recent exercise, when a column of R.A.S.C. lorries used one of the routes given —not knowing, of course, of the A.R.P. exercise—we have a situation quite likely to arise in air raid conditions unless there is some superior co-ordinating authority for all movements by road. Given a Corps and Divisional Transport system it should be possible to reduce road-blocks to a minimum. Moreover, the A.R.P. personnel, who have done little more than touch the fringe of this problem so far, could be given the benefit of that experience which was gained in the Aldershot Command Road Movement Exercises of 1938 and 1939. Further, if all A.R.P. drivers were enlisted men, as they would have to become under the suggested scheme, it would be possible to give them training identical with that received in the R.A.S.C., which would very much simplify the transport problems of A.R.P. The present writer has knowledge of one Borough which issued an instruction that in the event of any breakdown the driver was not to touch the vehicle himself, but to ring up the Borough Transport Officer. This meant that even if it was only a matter of mending a fuse or cleaning a plug, the vehicle had to be left at the roadside until an engineer arrived to deal with it. This order, absurd as it sounds, was necessitated by the fact that many private car drivers knew nothing at all about the engines of the vehicles they drove, having been accustomed in peace-time to get everything done by a garage.

The large number of women working in the A.R.P. services would not be a separate problem, since they could be absorbed into the Auxiliary Territorial Service at the same time as the men were enlisted into the special Passive Defence Divisions of the various Anti-Aircraft Corps.

Summary

The following is a summary of the changes required in command and organization of Home Defence against aircraft attack :—

(*a*) Unified Command over all forms of defence, both active and passive, against aircraft attack.

(*b*) Unification of the system of defence against aerial attack by converting the civilian A.R.P. Services into Passive Defence Anti-Aircraft Divisions.

(*c*) Local and municipal authorities should cease to have anything to do with A.R.P. work, which must become a military responsibility.

(*d*) Each Anti-Aircraft Corps to be formed of one Active Defence Division containing guns, lights, and fighting troops; and one Passive Defence Division covering A.R.P. Services and personnel.

(*e*) Feeding, maintenance, pay, and general administration of each type of Division would be exactly the same as with other Military Divisions.

(*f*) Organization of training courses for A.R.P. personnel where required, and granting of emergency commissions to all persons at present holding A.R.P. commands.

(*g*) Anti-Aircraft Defence Transport organization to control the national road system, and the use of roads. The Automobile Association's whole personnel could be taken over for this duty.

(*h*) Women A.R.P. workers to be absorbed into the Auxiliary Territorial Service.

(*i*) All full-time A.R.P. workers, male and female, to be enlisted personnel.

GEOGRAPHICAL CONSIDERATIONS IN EMPIRE DEFENCE

By Major Frederic Evans, M.B.E., R.A.M.C.

GEOGRAPHICAL control is inexorable: new developments in land, sea or air armaments alter the situation in degree but not in kind. The space-time factor, by advances in technology, may alter, but the essential control exercised by the relation of land masses to water will always be present and full account must be taken of them. To the intelligent observer these controls may be obvious, but it may be as well to recapitulate them frequently since they must always form the basis of our plans for the defence of the Empire.

The Empire is far-flung over the heterogeneous mass of land which forms the earth's surface, and is composed of a number of self-governing Dominions, Crown Colonies and the Indian Empire. Nor must we forget the Mandated Territories administered by Britain on behalf of the League of Nations, and to which body as far as these areas are concerned she is responsible in international law.

The first generalisation is that the Empire has come into being through a happy combination of sea power and the colonising spirit. After the French wars of the XVIIIth Century, which gave us Canada and India, there came the vast increase of population and wealth in this country that were the fruits of the industrial revolution. Thus both capital and personnel became available for export in large quantities just when colonies were acquired and sea power ensured an access to them. It is doubtful whether this combination was other than accidental, but nevertheless it gave the British people a start in Empire building of which they took full advantage.

It is axiomatic to state that an empire of this nature established upon sea power can only be maintained by sea power, so that Empire defence in the first place is essentially based upon this fundamental fact. The control which Britain may be able to exercise upon European affairs is in direct proportion to her ability to police the sea approaches to the Continent from the Atlantic, and to have a naval preponderance in the North Sea and in the Mediterranean. This naval superiority in these seas explains Britain's influence and co-operation with countries like Portugal, Egypt and Turkey. The change of outlook in Spain is to some extent due to the same fact, while the Nordic countries tend also

to be sympathetic to a nation which has command of their seas. The value of the Baltic and Black Seas as strategic areas is, in the world sense, small, although the latter may one day loom large in any Russian expansion aimed towards the Persian Gulf and the oilfields of Irak.

The Mediterranean Sea route to the Near and to the Far East has special interest to us in view of our commitments in Egypt and the Sudan and also in our great Indian Empire. Thus there is that chain of British stations stretched along this sea and the Red Sea—Gibraltar, Malta, Cyprus, Alexandria, Suez and Aden. It is, however, our interest in Egypt and the Sudan which, in particular, explain our concern with security in the Mediterranean, for, in the last resort, the Cape Route could again be used to India—and is indeed even now being used owing to the European War. This land-locked sea is clearly a central factor in British foreign policy. Our association with France and her North African colonies, our alliance with Turkey and our improving relations with our old friends, the Italians, and with a Catholic Spain are strengthening our interests in the Mediterranean which only a few years ago seemed to be seriously menaced. If Russian pressure is brought to bear upon Turkey, or if there is Russian penetration towards the Persian Gulf, then our standing in the Mediterranean and our vastly increased naval strength become factors of great moment in this part of the world.

It is now becoming clear to Italy that her African colonies are hostages to fortune if she challenges Britain's naval might. Italy, as a colonial power, is therefore essentially grouped with Britain while we retain the mastery of the seas. Abyssinia and Eritrea may at one stroke be severed from Italy by the British Navy, and even her communications with Libya and Tripoli are now subject to a greater degree of British and French control. These, among others, are some of the reasons which have made Signor Mussolini hesitate to cast in his lot with Germany which, by her Russian pact, has alienated not only Spanish and Japanese sympathies but a great deal of Italian opinion as well.

Suez and the Red Sea bring us to Aden—the Gate to the Indian Ocean, which is clearly to become a strategic naval basin of great importance to Britain. There is a possible Russian menace through the Persian Gulf. There are the British possessions in East Africa and there are, of course, India and Burma and the Malay States. These are the immediate concern of British naval power in the East; but Singapore, with its great naval dockyard, is also the base of a future Indian Ocean fleet which must act as the guardian of the self-governing commonwealths of Australia and New Zealand from possible Japanese aggression from the North. Thus our Indian Ocean fleet unit, when it is fully formed, will serve as a reservoir of naval strength to reinforce that of our brethren

in the Antipodes, so that they can present a strong front in the South Pacific against the aggressive intentions of other Powers.

It is here that our interests meet those of the United States of America and are coincident with them. It is inconceivable that the British Navy should ever be in conflict with that of the United States, which country is also equally interested in the checkmating of the predatory designs of Japan in the Pacific. The Panama Canal has, to the United States, a special value in the possible concentration, when necessary, of their naval strength in the Pacific. But such a concentration tacitly implies friendly British support in the Atlantic. It is rather curious that this fact seems not to be apparent to American observers. The defeat of Britain by Germany, followed by a German military alliance either with a victorious Russia or a revived Japan in the Far East, would mean that the United States could not concentrate the whole of her fleet either in the Pacific or the Atlantic Oceans. She would have to maintain, in these circumstances, fleets equal at least to her present fleet in both these oceans. It is therefore strange that there is not more active support for Britain's cause from America, for obviously the United States benefits almost as much from British naval power as Britain does herself.

This question of the command of the sea has a bearing upon the possible return to a reformed Germany of some of her late colonies. While it is true that these colonies might be made bases for military aggression, yet so long as Britain retains her control of the seas these far-flung fragments of a German Empire could be quickly neutralised and would form points of weakness in an aggressive Germany.

What does emerge from a consideration of modern warfare is that forces must be more localised and available for instant action in any part of the world. Against armaments like fast warships, aeroplanes, mechanized transport and tanks, there can be no time lag and the defence must be quickly on the spot. This fact is exemplified in the decision of the Soviet Government to organize a complete and self-supporting army and air force unit in Eastern Siberia as an immediately available counter to Japanese moves against Russian spheres of influence in that area. Similarly, it would be necessary to establish for Britain a first class Indian-Pacific fleet, linked with the defence of Australia and New Zealand. Singapore is probably only the first of the great naval bases essential to this plan. Various missions to our Empire in this part of the world bear witness to the realisation of this necessity by those responsible for Imperial defence.

Naval supremacy makes military operations possible upon land and enables us to bring such forces to bear at critical points. For instance,

a Russian advance into Irak and Iran could be countered from the Persian Gulf, but only because Britain has command of the sea.

Linked essentially with our naval organization is our air strength. Naval bases mean air bases also, especially when associated with the ubiquitous aircraft carrier. Aeroplanes are fast becoming the eyes of the fleet and are proving themselves to be admirable anti-submarine weapons. The Empire, therefore, must also be supreme in the air and be able to concentrate sufficient air power at any point to meet the local menace. That is why Sir Kingsley Wood's plan to develop in all the countries of the British Commonwealth the manufacture of military aircraft and the training of pilots is essential to the Empire's future security. Based upon a secure and centrally placed Canada, this will make the Empire impregnable from the air. There must be no weak spots; regional schemes of defence are clearly being visualised and planned and, with the Empire's unrivalled resources in materials, manufacturing ability and in the right type of personnel, we need have no fear of the future once the immediate challenge of this war is met and defeated. In the same defensive regions there must be the necessary army establishments commensurate with the naval and air forces.

The new scheme of defence will mean strong units in the natural defensive regions of the Empire—the North Sea, the Mediterranean and Red Sea, the Indian and Pacific Oceans. In these regional schemes the countries belonging to the British Commonwealth will play their full part. It is no longer possible for the Mother Country to shoulder the whole burden of the defence of the Empire. Nor do the countries of the Empire desire this; as self-governing Dominions they wish to take their full place in the defence of the region of the Empire in which they find themselves. This is the fundamental need that emerges from a study of Empire geography in relation to the modern requirements of its defence.

THE SECOND GERMAN SUBMARINE CAMPAIGN

By R. H. Gibson.

EVENTS have a peculiar habit of falsifying prophecy, and the course of the German naval campaign during the first three months of war has shown that history does not always repeat itself. It will be of interest, therefore, to notice how different from 1914 has been the recent strategy of the enemy at sea.

In August, 1914, the German Naval Staff had but little faith in the submarine arm; there was no conception of any lightning stroke against either warships or merchant vessels by underwater attack, and except for the first scouting cruise of ten U-boats two days after the outbreak of war —a cruise which ended disastrously with the loss of two units—they only gradually gained confidence in this untried naval weapon and began to send out submarines singly or in half flotillas to seek out the Grand Fleet squadrons. A measure of this lukewarm attitude can be assessed from the fact that in the seven years preceding the Great War, only forty-five German submarines had been built or ordered, of which barely twenty were in service prior to the outbreak of hostilities. Eleven weeks were to elapse before the first merchant vessel was destroyed by a U-boat: off Stavanger on 20th October the "Glitra," a small steamer of 866 tons, was intercepted by U.17 and afterwards scuttled. It is important to notice that this action was taken on the sole initiative of the submarine's captain, and not by order of the German Commander-in-Chief. It certainly revealed the possibilities of exploiting and developing attack by submarine on an enemy's trade, in conjunction with that being waged by surface raiders on oceanic routes. German naval authorities have always denied that any such plan of a trade war was contemplated before the war, although certain British experts recognised that such a course might be pursued: it was clearly foreshadowed by Fred T. Jane in *Heresies of Sea Power*, and Lord Fisher, assisted by Captain S. S. Hall, wrote a memorandum in 1913 prophesying such warfare; but the notion was coldly received.

Sporadic attacks followed during the ensuing weeks. They were made in the English Channel, in the southern part of the North Sea, and later extended as far West as Liverpool Bay. Here was a clear warning of what actually came to pass. Up to 18th February, 1915—the date fixed for the first campaign against commerce—eleven British vessels and one

belonging to an ally were sunk and five others unsuccessfully attacked, including a hospital ship. The noteworthy fact is that six months should have elapsed before the first onslaught on shipping was delivered. It lasted until the close of the year, by which time 227 British steamers and 168 fishing craft had been accounted for, whilst mines had claimed another 35 vessels. Moreover, the submarine menace had been carried into the Mediterranean, where severe losses were incurred. On the roll of sunken shipping were to be numbered such famous liners as the " Falaba," " Lusitania," " Arabic," " Hesperian," " Royal Edward," and " Persia," and numerous large cargo carriers. Many allied and neutral ships were also sunk. Furthermore, the U-boats had gained an impressive bag of naval tonnage. The sinking of the small cruiser " Pathfinder " by U.21 off St. Abb's Head on 5th September was followed on the 22nd of the same month by the torpedoing of the large cruisers " Aboukir," " Cressy " and " Hogue " off the Dutch coast by U.9, whose commander followed up his feat six weeks later, on 15th October, by sending to the bottom of the North Sea the cruiser " Hawke." Next came the sinking of the aircraft carrier " Hermes " in the Straits of Dover by U.27 on 31st October, and the destruction of the gunboat " Niger " by U.12 off Deal on 11th November. On New Year's Day, 1915, U.24 dealt the battleship " Formidable " a mortal blow off Start Point. As the U-boats discovered new seas in which they could operate, the Mediterranean became the arena of further naval losses. Here U.21 found and sank the battleship " Triumph " off Gallipoli on 25th May, and two days later she put down the old battleship " Majestic." Other smaller warships were also victims of submarine attacks in those waters.

Even more serious was the fact that the U-boat threat forced the Grand Fleet to leave its base at Scapa Flow and at one time to retreat as far as the waters of Northern Ireland—a move which was the indirect cause of the loss of one of our most valuable units: off Tory Island, mines had been laid by the German auxiliary cruiser " Berlin " to impede shipping, and into this field steamed the battleship " Audacious " with fatal result. Nevertheless Scapa Flow remained inviolate from German attempts to enter the anchorage. U.18 paid the penalty on 23rd November when she made an attempt to penetrate that land-locked sheet of water; and not until four years later did another U boat try to repeat this feat, when on 28th October, 1918, UB.116 made a last desperate attempt to get through Hoxa Sound. It has been admitted that the loss of the " Royal Oak " was due to the Scapa defences being less complete than they were formerly. Doubtless this defect has now been made good.

Now let us turn to the present time. Hitler's *blitzkrieg* found its first expression at sea. During the tense days of August, 1939, the successors

of the 1914 U-boats began to steal out of their bases and thread their courses through the North Sea to take up war stations athwart the shipping routes to these islands. There was no dallying this time with tentative and sporadic raids on merchant vessels, no groping for small initial gains, no intention to concentrate only on naval targets. Instead, within a few hours of Britain's declaration of war, the large Donaldson liner "Athenia" was sunk in the North Atlantic with the loss of 122 souls, many of whom were neutral citizens. In quick succession there followed ships large and small, one after the other, until within one week eleven vessels of over 64,000 tons gross were destroyed by torpedo, gun or bomb. And the wonder is that the holocaust was not greater: those who had studied the strategy of the last war expected a far greater casualty list and feared a rising mortality roll in the ensuing weeks. Actually, the second week's toll revealed an increase of 3,000 tons and five additional ships; yet the third week showed a decrease, the losses amounting to seven ships totalling 14,000 tons, and slender hopes that this was not a false lull began to strengthen when the fourth week witnessed the loss of but three ships totalling 10,000 tons. Legitimate hopes began to rise and were confirmed by the succeeding figures:—

Fifth week ..	..	2	ships of	6,000	tons gross
Sixth week ..	..	3	„ „	18,000	„ „
Seventh week..	..	4	„ „	26,800	„ „
Eighth week ..	..	7	„ „	14,400	„ „
Ninth week ..	..	3	„ „	18,000	„ „

It was realised that the lower the total became, the more apparent would be the fluctuation. For example, in the seventh week, two large ships were lost in an unescorted convoy with heavy loss of life, and it will be seen that a large cargo liner, such as one of the singularly unfortunate 9,000-ton ships of the Brocklebank Line, can cause a rapid rise in the tonnage total when the figures have been reduced to a low level.

Thus was the first wave of the U-boats spent by the end of September. The Prime Minister has clearly stated that, in spite of the reduction of shipping losses, there was ample evidence early in October that U-boats were still at work off our coast and were being vigorously hunted by day and by night. Very significantly he added that they had been driven to seek their prey in the outer seas. Now, when the 1914–1918 German submarine war was waged, it was estimated that to maintain a war station off the western seaboard absorbed five U-boats—one on station, one returning, one being opened up for repairs, one completing refit, and the fifth *en route* to relieve the active unit. In other words, the strength of the active list must be divided by five. In practice, it was generally found

possible to have a quarter of the total strength on war stations, depending on the distance at which the U-boats were forced to seek their prey. In those days the enemy maintained submarines at work in waters far from the North Sea and Atlantic. If we apply this scale to-day, what do we get? This is not an easy question to answer, because estimated figures are governed by two unknown quantities—the mortality inflicted on the U-boats and the rate of new construction. We may assume, however, that by the end of November Germany had lost nearly thirty U-boats, large and small, and it has been authoritatively stated that she was suffering an average weekly loss of between two and four units. At the outbreak of war it was believed that she had, built and completing, 71 boats, of which certainly 60 and probably 65 were already in service. Of this total, 32 (U.1–U.24 and U.56–U.63 classes) were small craft of 250 tons displacement, ostensibly designed to counter Russia's Baltic ambitions. They have doubtless been employed against shipping in the southern part of the North Sea and against the Scandinavian trade. Next, there are the twenty-four sea-going boats of 500 tons (U.27–U.36, U.45–U.55 and U.69–U.71 classes) which have been the active agents of destruction off these shores. Finally, there are fifteen ocean-going craft of 712–740 tons (U.25–U.26, U.37–U.44 and U.64–U.68 classes). These have almost certainly operated farther out in the Atlantic, in the attacks made more than 500 miles from land. A sea-going boat can remain out at least three weeks under normal war conditions and an ocean-going craft longer. It was therefore expected that the U-boats would be at a maximum strength for a period of three to four weeks, when those sent out must return. The toll of shipping would then be taken by the reliefs. But what happened? The drop in the rate of shipping losses after the third week has been recorded. Were there then no reliefs? Had all the available U-boats been sent out before hostilities opened for Hitler's "lightning war"?

Out of this maze of uncertainty one or two facts emerge. Some 40 to 45 of these 71 U-boats are lying on the bottom of the sea. They have been eliminated by the constant and relentless hunt carried on by the allied sea and air patrols, which have unceasingly harried the enemy's underwater craft by day and by night. During September alone, the Royal Air Force made thirty-four attacks on hostile submarines, exclusive of those delivered by warships. Further, the prompt adoption of convoy from the outset began to bear fruit, although losses had to be faced before the vast organization could be made to embrace the world-wide traffic, such as those of the "Yorkshire" and "City of Mandalay"—in convoy, but unescorted.

The attack by the smaller U-boats on neutral shipping, whereby 30 vessels were sunk during the first three months is a poor substitute for direct attack on our ocean trade. Designed to intimidate the neutral shipowners, history has shown that a similar attempt in 1914–1918 utterly failed.

The second wave of U-boats was detected towards the end of October as the surviving raiders were sent out to renew their depredations, but a meagre bag was obtained. Against this failure of the war against trade must be set the losses of the " Courageous " and " Royal Oak." The aircraft carrier was lost through sheer ill-luck, but the loss of the battleship falls into another category ; for it meant that the Fleet anchorage in Scapa Flow had not been made impregnable. Commander Prien has claimed that he took his U-boat into Scapa Flow on the surface with searchlights burning, but it is more than likely that he slipped through the gap left for the last blockship, which actually arrived on the following day. If any further warning were needed, we have it in the penetration of the Firth of Forth on 21st November, when the cruiser " Belfast " was torpedoed and damaged.

Any idea that the submarine peril had been overcome was dispelled by the sudden and violent minelaying campaign off the South-East and East Coasts in the middle of November, when numbers of British and neutral ships, notably the Dutch liner " Simon Bolivar " and the Japanese liner " Terukuni Maru," were destroyed in quick succession. This revealed the fact that mines of a magnetic type were being used and that seaplanes might be co-operating in the work of laying them. In the last war mining by submarine did not begin until nearly a year after hostilities broke out, and it never assumed the deadly proportions reached by torpedo attacks. At the climax of the submarine warfare on shipping, in April, 1917, each day a minesweeper was blown up in its perilous work of cleansing the seas and keeping free the War Channel up the East Coast. Four thousand mines were swept up during that year alone, and altogether 11,000 German mines were laid around these islands by the enemy. The mortality to British shipping, sunk and damaged, reached a total of over 300 vessels, but losses were reduced by the use of the paravane. The enemy endeavoured to outwit the sweepers on occasions by the use of a delay-action mine, which would rise to the surface in the wake of a sweeper.

In this war mining started within the first three months. That the Germans have profited by their former relative failure is evident. During the nights of 20th–21st November at least five separate areas were fouled by mines, some of which were undoubtedly laid by aircraft. In one case, a seaplane was observed to land on the surface and lay

mines, and in other cases mines are believed to have been dropped by bombers.

Twelve months ago *Nauticus*—the German official handbook, reported experiments in mine dropping from aircraft, and now it is clear that they have perfected this new technique. In order to avoid premature explosion on contact with the sea, a parachute attachment is provided to check the rate of descent. The mines themselves are of a new type; they contain a magnetic device and when vessels pass within the magnetic field a series of relays are set in motion whereby the mine rises and detonates against the bottom of the vessel. Laid, as they have to be, in comparatively shallow water, these mines present a difficult task for the sweepers, but there is evidence that counter-measures are succeeding.

This new offensive against shipping has been promptly answered by the Allied embargo on Germany's export trade—a measure which was brought into force only after three years of war in 1914–1918 and then also as a result of her indiscriminate submarine campaign.

The crux of the problem presented to the Allies seems to be the rapidity with which Germany can replace losses and expand her flotillas. Recently it has been stated that a large scale building programme has been put in hand to the extent of 400 submarines. At first glance this figure may appear to border on the realms of phantasy, but in the 1914–1918 war no fewer than 765 German U-boats were built, building and projected. In fact, 344 were actually built, of which 186 were ordered within the first eighteen months. Constructional delays were allowed to interfere, and thus held up the output of new boats. Even before the collapse of the Central Powers in 1918, Germany had learnt this lesson, and we can be certain that no repetition of tardy ordering will be entertained to-day. It is known that 28 new boats are already building; these will bring the total to around 100 (less any war losses). Here we may notice that in December, 1938, the German Government announced an increase of their submarine strength to six flotillas of twelve boats each by January, 1939. Mr. Winston Churchill, in the course of the Navy Estimates debate in March, 1939, said that he had not the slightest doubt that the submarines were ready in sections. We can be certain that during the last twelve months a very extensive programme has been planned down to the last detail for the mass production of submarines. In 1914–1915 some of the small UB. and UC. boats were completed within four to six months, and in view of the recent mining offensive can there be little doubt that the work is being performed by new mine-laying craft which have been rapidly constructed or adapted for such purposes?

We have won the first round, but there can be no breathing space, and there will be a life or death struggle at sea this year. It is a fact that in the last war the rate of U-boat destruction never exceeded their output: indeed it was fully realized by the Allies that a bitter struggle was about to be entered upon in 1919, had the war continued. On the other hand, the German submarine personnel was becoming increasingly inferior to the earlier crews, and this went far to counterbalance any purely material advantage. To-day, former submarine officers are reported to have been called up to train the young crews, and for many years there has been intensive and regular submarine instruction in the German navy. We may recall the sudden appearance of their first twelve submarines, complete with crews, and subsequently the unceasing activity of U-boats in Spanish waters. Therefore, we should not assume that no provision has been made to man efficiently the new enemy under-water craft.

The New Year will inevitably see an increasing strain on our naval and aerial anti-submarine units; yet we can take comfort from the fact that the greater the number of their enemies, the more numerous will be their targets.

ECONOMIC ASPECTS OF EMPIRE DEFENCE

By C. E. Fayle. [1]

In treating so extensive a subject in the short time at my disposal I can only attempt to deal with it in the broadest outline. I hope, however, that even a bald summary of the Economic Aspects of Empire Defence will throw some light on the problems of Imperial co-operation in time of war.

The economic resources on which a nation at war depends, both for its fighting strength and for its endurance, may be grouped under six main heads. It needs adequate *Food Supplies*, both for the fighting Services and for the civil population; *Raw Materials* for its industries, in order that these may be able to equip, arm, and munition the fighting Services, and to pay by exports for its requirements from abroad; *Fuel* as the motive power of its industries and transport; *Plant and Machinery*, including plant which is either designed for the production of arms and munitions or readily adaptable to that purpose; an efficient system of internal and external *Transport* to give mobility to its forces and to carry foodstuffs, materials, munitions and manufactures to the places where they are required. Finally, its ability to make effective use of these material resources will depend very much on the strength and elasticity of its *Commercial and Financial Organization*.

To utilize these resources to the best advantage in the development of the national war effort; to procure from abroad those resources in which the state itself may be lacking; to preserve the activities, by which these resources are procured, exploited, and made available, from interruption by the enemy—this is the problem which has to be solved by every nation at war. Conversely, it is an essential part of the war effort to deny, so far as possible, such resources to the enemy, and to prevent him from utilizing those which he possesses.

These are problems common to all states; but the precise form that they take and the emphasis laid on each of these six primary factors varies widely as between state and state. Take, for instance, the position of the principal Allies in the late war. For Great Britain, as always, the primary consideration was the safety of the sea routes by

[1] This Lecture given by Mr. Fayle at the Royal United Service Institution on Wednesday, 17th January, 1934, is reprinted on account of its importance at the present time.

which the bulk of her food supplies and essential raw materials were received. Russia, self-sufficing in foodstuffs and with immense potential wealth in raw materials, lacked the plant and machinery necessary to turn those materials into arms and munitions, while her transport system proved unequal to the task of moving and supplying her armies and, at the same time, providing for adequate distribution of her food supplies. For France, highly equipped industrially, the whole situation was changed when her armies proved unable to keep the invader out of the districts in which her mining and manufacturing strength was chiefly concentrated. For Italy, a complete dependence on oversea supplies for the fuel necessary to her industries and transport was always the most urgent preoccupation.

ECONOMIC SITUATION OF THE BRITISH EMPIRE

Now the British Empire, even from the political standpoint, is not a state but a confederation of states, and neither geographically nor economically is it a unit at all. The countries which make up the British Commonwealth of Nations are separated from each other by thousands of miles of sea; they represent different stages of economic development and almost the widest possible varieties of climate, of soil, of geographical conditions, and of natural resources. Great Britain is a small, thickly populated, highly industrialized island state; Australia is an immense, sparsely populated island continent, mainly agricultural and pastoral; Canada has two thousand miles of land frontier.

These differences in situation, in conditions and circumstances, and in special interests, are naturally reflected in divergences of outlook and policy in time of peace; and in time of war the economic aspects of Empire Defence take widely different shape in the different countries of the Empire. Yet the task in war, of the Empire as a whole, is so to solve these problems that, while no important separate interest is neglected, the whole joint resources of the Empire may be utilized for the common good and the whole of its activities directed to the attainment of a common object.

A very brief survey of Imperial resources under our six main headings —food supplies, raw materials, fuel, manufacturing capacity, transport, commercial and financial organization—will serve to show how widely varied are the problems which the different nations of the Empire have to face, and will give, also, some hints for their solution.

Food Supplies

For food supplies the United Kingdom depends upon imports to the extent of two-thirds at least of its annual consumption. The other chief partners in the British Commonwealth are, in the main, self-sufficing.

Canada, Australia and New Zealand are, in fact, very large exporters of primary foodstuffs. The demands of the United Kingdom are actually met, to a great extent, from Empire sources, and the Empire as a whole is potentially self-sufficing, so far as mere capacity for production is concerned.

Raw Materials

For raw materials, all Empire countries are largely dependent on imports. Each has its own characteristic products and its own special deficiencies. The outstanding feature in the position is the enormous import demand of the United Kingdom with its limited natural resources and high industrial development. Almost all its staple industries import either the whole or a very substantial proportion of their requirements, and of these imports a large part are drawn from other countries of the Empire. In India and the self-governing Dominions the industries are confined, to a considerable extent, to those for which local materials are available, and though they all have imports, they also all have important exports of raw materials. Most of the Crown Colonies, being little developed industrially, are important chiefly as sources of raw materials; British Malaya, for instance, depends for its prosperity mainly on its exports of tin and rubber, and the West African Colonies on their shipments of oil-seeds and kernels. There are many important products, such as tin, nickel, manganese, lead, wool, jute and rubber in which the Empire, taken as a whole, is self-sufficing, and for many of these the rest of the world depends largely on British Empire supplies. On the other hand, there are some very important materials—iron ore and cotton are notable examples—in which the Empire, even as a whole, is not self-sufficing, at any rate, on the basis of present development; and some, such as antimony, potash, sulphur, and quicksilver, for which the Empire is almost entirely dependent on foreign sources.

Fuel

Coming now to fuel we have to note a very great difference in the position as regards the two chief categories. The United Kingdom is still the leading coal-exporting country; Australia and South Africa also have a surplus; India is self-sufficing, and although Canada is an importer on a large scale and many of the Crown Colonies on a smaller scale, the production of the Empire is equal to all Empire needs. For petroleum, on the other hand, all the chief Empire countries are dependent on imports, and only two minor exporting sources—Trinidad and British North Borneo—are within the Empire, although there are other supplies, in Persia and Iraq, that are at least partially under British financial control.

Manufacturing Capacity

As regards manufacturing capacity, conditions vary so widely as to make generalization difficult. The Crown Colonies count for little in this respect. India, Australia, New Zealand, and South Africa have all growing industries, and industrial development in Canada has reached a high level ; much of the plant being capable, as was shown in the late war, of diversion to munitions purposes. Nevertheless, it is still roughly true to say that the prosperity of the Dominions depends mainly on their primary production, and that most of them depend largely on imports for manufactured goods ; while the United Kingdom, though it imports large quantities of manufactured goods, for the sake of cheapness, of fashion, or of special excellence, is well equipped for carrying on almost every kind of industry, and pays for its supplies of foodstuffs and raw materials by its exports of manufactured goods.

Transport and Finance

The internal transport system of the United Kingdom is highly developed and that of most other Empire countries is adequate to their present normal needs. External transport is almost entirely a matter of shipping, since Canada alone has any extensive foreign trade over a land frontier. Many ocean-going ships are registered at Dominion and Colonial ports, in addition to great numbers of coasting craft ; but the great bulk of the ocean-going British tonnage is on United Kingdom register, and ships registered at United Kingdom ports play a large part in the trade of all Empire countries.

Finally, it is mainly to the United Kingdom, with its centuries of capital accumulation, that the other Empire countries look when they require additional funds for public works or for industrial and agricultural development, and a great part of their external trade is financed and insured in London. The London produce markets play a large part in the disposal of their products, even to foreign buyers, and a great deal of Dominion and Colonial produce is handled in the United Kingdom *entrepôts*.

Even from this very brief, very imperfect, and I fear very dry, summary, it will be seen that the resources of the Empire countries are largely complementary. Speaking broadly, the United Kingdom has more capital than can profitably be employed within its own restricted area ; more manufacturing plant than is required for supplying the needs of its own population ; more tonnage than is needed for its own trade. Its needs are for foodstuffs to keep its people alive, and raw materials to keep its industries going, fields for investment of its surplus capital, cargoes for its ships to carry, and markets for its manufactured

goods. All these the other countries of the Empire can supply, and in supplying them they receive the satisfaction of their own no less essential requirements; for their prosperity, and even the maintenance of a decent standard of life for their people, depend largely upon their ability to sell their primary products overseas, to procure manufactured goods with the proceeds, to obtain new capital when required for the development of their resources, and to make use of the money, insurance, and freight markets of the United Kingdom. The Yorkshire mill-owner, the London financier and the London or Liverpool shipowner are as important to the Australian farmer as the Australian farmer is to them.

INTER-EMPIRE TRADE

Nevertheless, if we take the "Total Value of Merchandise passing in the Trade of the British Empire," as shown in the *Statistical Abstract*, we find that little more than a quarter consists of trade within the Empire, while three-quarters consists of trade with foreign countries. In this calculation the total value of the trade between any two Empire countries—being a joint interest—is divided equally between them. If we simply add up the total imports and exports of all Empire countries, so that the inter-Imperial traffic is credited to *both* the countries concerned, trade within the Empire will amount to just over 40 per cent. and trade with foreign countries to just under 60 per cent. of the total.

At the present moment[1], the proportion of Inter-Imperial trade to the total is on the increase, and it is likely to increase still further in the near future; but neither actually nor potentially is the Empire self-sufficing in practice. This is not merely a question of those products which it does not, or cannot, produce on a scale adequate to Empire needs, although these, as we have seen, are important; it is a question also of the geographical and economic factors which govern the movements of trade.

In respect of very weighty and bulky commodities, mere distance will always be an important consideration. In no circumstances, for instance, is the iron ore which now goes from Malaya and Australia to Japan likely to replace the supplies now drawn by the United Kingdom from Spain and Scandinavia. Even in general trade, a shorter voyage involving lower freights and quicker deliveries, is often a very definite advantage. It helps, for instance, to account for the severity of American (and incidentally of Canadian) competition in the Australasian markets.

THE FLOW OF TRADE

Old-established trade connections, reciprocity of demand and distribution of investments all have their influence on the flow of trade. The

[1] 1934.

importance of Scandinavian and Baltic markets to British coal-producers assists the sale of bacon and dairy produce from these countries in the United Kingdom. The investment of hundreds of millions of pounds of British capital in Argentina inevitably provokes a steady flow of trade between London and Liverpool and the Plate. The United States occupies a predominant position in the Malayan trade returns because its consumption of rubber is many times that of any other country.

In the commercial relations between Canada and the United States all these factors may be seen at work. The two countries are contiguous; the Great Lakes provide a ready means of communication; the Americans have need of Canadian nickel, and asbestos and wood pulp, and their interest in the development of Canadian resources has led them to invest an immense amount of capital in the Country. British manufacturers may gain, in time, a larger share of Canadian orders, but to Canada the United States must always be of primary importance both as a market and as a source of supplies.

Trade in fact will find, in time of peace, its natural channels, although these channels may be modified to some extent by fiscal and political arrangements. In time of war, other factors have to be taken into account. Considerations of war finance will dictate purchases in Empire markets, where credits can more easily be arranged, with the aid of the Dominion or Colonial governments, in the event of exports falling away. On the other hand, the safety of routes and the length of routes may become primary considerations. In 1917 and 1918, when tonnage was greatly reduced by war losses and by requisitioning for naval and military purposes, it became necessary for grain and meat purchases from Australia and New Zealand to be cut down to a minimum, and purchases from Canada, the United States, and Argentina raised to a maximum, simply because it was only by concentrating the available ships on the shortest routes that the minimum of essential supplies could be brought in. Australia and New Zealand, for their part, were obliged to seek from the United States and Japan goods which Great Britain was no longer able to supply, either through shortage of tonnage or through the diversion of labour and material to war purposes.

The flow of trade will thus be regulated both in peace and in war by the circumstances and needs of the individual countries of the Empire. It would, however, be a profound mistake to suppose that the trade of any Empire country with countries outside the Empire was a matter of concern to itself alone, and of no Imperial interest. In the first place, the contribution which each Empire country makes to the collective strength of the Empire, political, military, and economic, is affected by its trade as a whole. It is the wealth derived by Great

Britain from trade with Europe and South America, as well as with Empire countries, that enables her to bear so large a proportion of the financial burden of Imperial Defence, and the wide extent of her markets enables her to equip her industries more efficiently, and to supply goods to the Dominions more cheaply, than would be possible if the Empire was the sole outlet for her products. It is by the sale of wheat to France and Italy as well as to Great Britain that Canada has been able to extend her agriculture and improve her transport system, until she has become the greatest granary of the Empire.

In the second place, a great deal of the world's trade is carried on by means of triangular exchanges. The purchasing power of Great Britain in the United States is substantially increased by credits derived from sales to Indian merchants, who purchase British goods with the proceeds of gunny bags and manganese ore shipped to New York.

Finally, a great part of the trade of all Empire countries with foreign countries is carried in British ships, financed by British capital, and insured by British underwriters.

DEFENCE OF TRADE ROUTES

It follows that any blow to the trade of any Empire country, whether that trade be with the rest of the Empire or with foreign countries, will, in some measure, affect the prosperity, and credit, and strength of the Empire as a whole. Each part of the Empire has its own special problems and its own special interests; to each part particular commodities, sources, markets, and routes are of peculiar importance; but each Empire country has also a direct practical interest in the welfare of all the rest, and it is to the interest of each that the problem of trade defence should be looked at as a whole.

In about one-half of this total trade, the United Kingdom is directly interested as importer or exporter; Canada in about one-eighth; India in about one-tenth. Australia and Malaya are the only other countries individually responsible for more than 5 per cent. of the total. Practically the whole of the traffic, with the exception of that which crosses the Canada-United States frontier, is carried on by sea, and the task of protecting it from interruption in time of war falls almost entirely on the British Navy.

It must be remembered, however, that in defending the trade of the United Kingdom, the Navy will also protect, automatically, a large proportion of the trade of other Empire countries. Let us take, as a concrete example, the trade of Australia. Forty per cent. of that trade is carried on with the United Kingdom itself, and much of the remainder follows the same routes. The protection of trade between Sydney and

London or Liverpool, via Suez, will automatically give cover to Australian trade with India and Europe ; the protection of the Panama route will automatically cover, for the greater part of its passage, Australian trade with the East Coast of North America. Indeed, the trade of the United Kingdom is so ubiquitous that adequate protection given to the routes it follows would leave few branches of Empire commerce undefended.

There are, nevertheless, cross-routes in which the United Kingdom has little direct interest, but which carry trades of substantial importance to other Empire countries. Such, for example, are the tracks between India and East Africa, between Australia and the countries and islands of the Western Pacific, and between Australia and New Zealand and the West Coast of North America. Further, even where the routes are common, there may be considerable stretches which are relatively of much less importance to the predominant naval partner than to other members of the British Commonwealth. Hence problems may arise both in the allocation of forces and in the routeing of merchant shipping, in which there is a genuine conflict between the claims of special interests to protection and the principle of concentration.

For Great Britain, the primary consideration must always be the security of the Atlantic approaches in which all the long-distance trade routes converge upon the Channel and Irish Sea. It may be no easy task in certain contingencies to reconcile this requirement with the provision of what other Empire countries may consider as an adequate scale of defence for the ocean trade routes. It is essential, therefore, that it should be clearly recognized that the security of the Atlantic approaches is the first consideration not merely for the United Kingdom but for the Empire as a whole. It is here that the trade of all Empire countries, both with the United Kingdom itself and with all other countries of northern and western Europe, is most vulnerable to attack, and there are indirect interests at stake of the most vital importance. The extreme dependence of Great Britain on imports both for foodstuffs and raw materials renders her the most vulnerable to attack by sea of all the countries of the Empire. At the same time, it is upon her that the biggest share of the naval, the military, the air, and the financial burden of war is likely to fall, and her markets, her shipping, and her financial resources are of essential importance to every part of the Empire. So long as her resources remain comparatively unimpaired, the heaviest blow which can be struck at Empire trade in the outer seas will leave no irrecoverable wound ; but the collapse of Great Britain would not merely be fatal to the joint war effort, it would also involve ruinous and lasting economic consequences to all members of the British Commonwealth.

The solution, without friction, of these problems of trade defence depends on mutual understanding and close co-operation between the various governments and defence authorities of the Empire. Such co-operation is at least as necessary in dealing with the problems of trade control.

CONTROL OF TRADE IN WAR

It would take not a lecture but a very long book to discuss fully all the concrete problems which may arise in connection with the utilization of Empire resources to the maximum advantage, and the attempt to exercise economic pressure on the enemy.

The obvious first step in the economic offensive is prevention of Trading with the Enemy; but this, as we learned in 1914, involves not merely the stoppage of all direct intercourse with enemy ports but a watchful and rigorous control of all trade with neutral ports with which he has communication. It may involve extreme hardship to producers in an Empire country, accustomed to ship a large proportion of their products to enemy markets, more especially if those products are of a specialized character for which the Empire offers no adequate alternative market. This hardship may be still more severely felt if these products cannot immediately be declared contraband, and increased supplies from neutral sources replace, in part, those formerly drawn from the Empire. In such circumstances the policy of a rigorous control of Empire supplies may not be easy to apply. Should it be applied, the Government concerned may well consider itself entitled to financial assistance in its efforts to mitigate the lot of the producers.

This, however, is only the first step in the exercise of economic pressure. All the weapons of the economic offensive—black lists, bunker control, the denial of financial and insurance facilities to neutral firms suspected of assisting enemy trade, the control of banking and exchange operations—may affect adversely the interests of Empire countries; yet in order that they may be fully effective, they must be applied rigorously and simultaneously throughout the Empire as a whole.

How far it may be necessary to interfere with the normal processes of industry and commerce for the purpose of sustaining the war effort of the Empire itself, will depend upon the scope and duration of the war. In a struggle of maximum intensity, which is likely to be prolonged, it may be necessary to stimulate by subsidies the production in all Empire sources of materials having a special value for war purposes, or of foodstuffs and raw materials normally procured from enemy sources. Here, again, there is a need both for an agreed common policy and for an equitable adjustment of its cost.

In any war involving naval and military operations on a large scale, it will almost certainly be necessary to restrict drastically the civilian consumption of petroleum and of many important raw materials, in order to ensure adequate supplies for the fighting Services and the munition industries. In many instances the United Kingdom is so much the largest consumer that it might not be necessary to interfere with civil consumption in the Dominions ; in others, it would probably be necessary to ask Dominion governments to co-operate by rationing their own people.

Should the tonnage available for commercial purposes be seriously reduced by war losses and the diversion of shipping to naval and military purposes, it may again be necessary, at any rate in the United Kingdom, to restrict by a system of prohibitions and licenses the import of goods that are not essential under war conditions in order to set free the maximum ship-space for the carriage of essentials. A commodity which is not of essential war importance may, however, play a very important part in the export trade of some Empire country, and in that event a policy of import restrictions cannot, without friction, be rigorously applied except by consent of the government concerned, and possibly some compensation to the interests affected.

The utilization of Imperial resources to the full demands also a common policy with regard to the conversion of suitable plant and machinery to munitions purposes ; governed in each country not merely by the requirements of local defence but by its proximity to the main theatre of war and by the contribution it can make to the supply of the Imperial forces. In addition to munition requirements the need for tonnage replacements and the requirements of Imperial finance may render it desirable to lay down in all Empire countries with highly developed industries a definite scheme of industrial priorities, postponing the requirements of the home consumer to the needs of the fighting and transport services and the export trades.

Among the gravest and most delicate problems are those concerned with the redistribution of purchases, either for the purpose of diverting shipping from a particularly dangerous route or for the purpose of economizing tonnage by concentrating it on the shortest routes. The Atlantic concentration in the last war left millions of pounds worth of grain and meat on the hands of Australian and New Zealand producers, and diversions on such a scale must inevitably involve consultation with the governments concerned, and substantial obligations in respect of assistance to the interests affected. Such diversions involve, of course, control of shipping as well as of purchases, and the control of shipping raises, at once, some interesting questions of jurisdiction. The right of

requisition, for instance, is a Crown prerogative, and in exercise of this prerogative, the governments of India and Australia requisitioned, in 1914, many ships on United Kingdom register which happened to be in their ports. The Admiralty did not, I think, requisition ships on Dominion and Colonial register, and certainly the Shipping Controller was given no power over such ships, all arrangements as to which had to be made with and through their own governments.

Control of shipping employed in the carriage of commercial cargoes may be exercised either through direct requisition or—which many of us would prefer—through a licensing system directed to the discouragement of ballast voyages and the diversion of shipping from the less essential trades, while interfering as little as possible with the normal processes of ship management. Whatever system be adopted, the essential thing is that it should be applied, under a common policy, to all British ocean-going ships, wherever registered. The provision of carrying power for the Empire as a whole is a common interest; the adequacy of such provision in the essential services may be a determining factor in the war, and it would be equally inequitable and short-sighted for any Empire country to withhold its contribution to the general pool in order that the ships might be employed, for its own special interests, in safe but not essential trades. For the same reason, as well as to avoid forcing up freights by competitive bidding, the chartering of neutral tonnage, if it cannot safely be left to the ordinary operations of the freight markets, should be entrusted to a central authority—on the lines of the Inter-Allied Chartering Bureau—and the tonnage procured allocated to each Empire country in accordance with its special needs.

THE PROBLEM OF FINANCE

Finally, there is the question of finance. We have already touched on this in so far as it affects the economic offensive, and the question of compensation to interests specially affected by sacrifices essential to attainment of the common object. There remains the wider problem of the pooling, if necessary, of the Empire's financial resources, in order that general assistance may be given to any country upon which the circumstances of the war impose an exceptional strain. In any event, close and cordial co-operation between the financial authorities of the chief Empire countries will be necessary, in order that war loans may be floated at the most advantageous moment and under the most favourable conditions, and that such operations as the pegging of exchanges or the mobilization of securities may be carried out with a due regard to common interests.

I have hardly had time to do more than name some of the outstanding problems arising from the Economic Aspects of Empire Defence;

but I have said enough, I think, to show that many of them are exceedingly complex and exceedingly delicate. The satisfactory solution of these problems depends on the wholehearted co-operation of many governments, representing countries with a wide variety of special interests, and with policies shaped in accordance with their own conception of these interests ; countries too, which may be affected in very different ways and to a very different degree by the immediate issues of the war. In 1914–18, thanks to the spirit animating the governments and peoples of the Empire, a satisfactory solution was usually found in course of time ; but I do not think we can say that the whole resources of the Empire were utilized, or that its capacity for economic pressure was exercised, either as fully or as quickly as they might have been if we had given more thought to these problems in time of peace. The process of trial and error was slow and costly. Conflicting opinions and conflicting interests had to be adjusted by negotiations which were prolonged by reason of the number of parties concerned and the distances separating them. Even when an agreement on policy was reached, the administrative machinery for carrying it into effect took time to build up.

IMPORTANCE OF QUICK DECISIONS

In time of war, quick decisions are as important as right decisions. Delay in applying measures of economic pressure may go far to nullify their effect. Delay in providing the maximum equipment and munitions for the fighting Services may cost thousands of lives and prolong the war by months or years. Delay in dealing with problems of supplies and tonnage may hamper the war effort, lead to heavy wasteful expenditure, and necessitate in the end drastic emergency measures involving an undesirable degree of commercial dislocation.

ALSACE-LORRAINE IN 1914

A STUDY IN INDECISION AND GERMAN STAFF WORK

By Brigadier-General Sir J. E. Edmonds, C.B., C.M.G.

THE operations of the German right wing in August–September, 1914, its sweep through Belgium, its semi-failure in the battles of the Frontier, the Ardennes, Charleroi, Mons, Le Cateau, the Meuse, and Guise, and its complete failure to achieve victory at the Marne, are well-known. The events on the left wing in Alsace-Lorraine, where there was a still more disastrous and decisive failure, have never attracted the same attention either here or in France. Yet they contributed in a marked degree to the collapse of the German plan for a rapid victory. The German left wing not only did not gain much ground, but also did not prevent General Joffre from shifting troops from his right to his left; and it suffered severe casualties to no purpose.

Parts of a so-called "Schlieffen plan," drawn up in 1905, have been put forward as the "receipt for victory," and the blame for failure cast upon Moltke II because he did not follow its provisions literally. To be exact, however, the said "Schlieffen plan" was not one of the German war plans, which were revised and brought up to date every year; it was merely a memorandum designed to prove to the War Minister that, if the French stood on the defensive, Germany did not possess sufficient forces to defeat them decisively. It is now known that the German plan as revised between 1905 and 1914, with the advice of Schlieffen, was for a "Cannae" on a grand scale; for two strong wings and a weak centre. Both wings were to advance, and Schlieffen placed little dependance on the progress of the right (Western) wing, which he expected would be checked by the French holding defensive positions; his idea was to reinforce it by troops brought from the East-Prussian frontier—after, as he hoped, an initial victory over the Russians. But in case of failure, the German army in East Prussia was to abandon territory and fall back to the Vistula; Prittwitz's mention of this movement after his defeat at Gumbinnen (the frontier battle seven days before Tannenberg) was not a counsel of despair, but "according to plan."

In Germany, the action of the left wing in Lorraine has been a subject of acute controversy; the more so as Crown Prince Rupprecht who commanded it, his staff, and about half of the troops were Bavarian, between whom and the Prussians no love has ever been lost. Disputes

between the Bavarians themselves arose. A mass of literature on the subject has appeared, some of the books being written by members of the staff of Crown Prince Rupprecht: written with inner knowledge of what went on and well supported by documents and diaries.[1] The story is instructive, as it shows the tremendous difficulties which confront the higher leaders at the outbreak of war, and also entertaining, as it exhibits the lack of practical experience of the German General Staff,

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[1] AUTHORITIES

The German Official History: *Der Weltkrieg* 1914–18, Vol. I.

Das Testament des Grafen Schlieffen and *Der Feldherr wider Willen*, by Lieut.-General Groener (Ludendorff's successor as First Quartermaster-General). These deal with the beginning of the War and attack the whole elder generation of Generals and General Staff Officers.

Kritischer Streifzug durch die Studien des Generalleutnant Wilhelm Groener über den Weltkrieg. Das Oberkommando in den Reichslanden im Sommer 1914, by General Krafft von Dellmensingen (Chief of the Staff of the Sixth Army under Crown Prince Rupprecht of Bavaria). A defence of the leading in Alsace-Lorraine against Lieut.-General Groener's criticism.

Die Führung des Kronprinzen Rupprecht von Bayern auf dem linken deutschen Heeresflügel im August 1914. A pamphlet by General Krafft von Dellmensingen dealing with further points.

Der Führerwille in Entstehung und Durchführung, by Major-General von Mertz (G.S.O.1 of the Sixth Army), later President of the *Reichsarchiv*, which compiled Vol. I of the German Official History. This attacks General Krafft and contains copious extracts from a diary and many details. It has been translated into French as *La volonté du Chef* (Paris: Payot).

Deutsche Führung in Lothringen 1914, by Colonel Rudolf Ritter und Edler von Zylander (G.S.O.2 of the Sixth Army). This attacks Major-General von Mertz and the Official History and also contains extracts from a diary and copies of documents.

Entscheidung in Lothringen 1914, by Dr. H. Gackenholz. As member of the Military History Section of the Historical Seminary of Friedrich Wilhelms University in Berlin, he has been allowed access to the War documents and, unlike the Official History, prints a most valuable collection of them. His quasi-military judgments seem of no great value.

Die Schlacht in Lothringen und in den Vogesen 1914. Two volumes published by the Bavarian *Kriegsarchiv*. These deal with the details of the fighting rather than the strategy, but include a large number of most useful situation maps, which the Official History lacks.

Mein Kriegstagebuch. Extracts from the war diary of Crown Prince Rupprecht. A day-by-day account.

Magazine articles, particularly in *Wissen und Wehr*, among them one (1925) by General Wetzell, the strategist, is a review of Vol. I of the Official History, in which he maintains that the Sixth Army in the beginning rightly grasped Moltke's intention of a decisive battle in Lorraine, but later departed from it, attacked too soon and in an aimless manner, and thereby spoilt this part of the operation.

The French Official History: *Les Armées francaises dans la Grande Guerre*. Tome I, Volumes ii and iii.

and the differences of view, bickerings and general inability to pull together of its members. In fact, there was little of the much-vaunted efficiency and smooth working, but unpleasant friction, just as happened in 1870–1, and has been so vividly described by Prince Krafft von Hohenlohe, General von Kretschmann, Fritz Hönig, and others.

As introduction, it may be stated that at the various Prussian General Staff tours, war games and winter studies in which plans for war on the two fronts had been carefully considered, it had been generally agreed, Field-Marshal Count von Schlieffen concurring, that the French would make their principal effort between Metz and Strasbourg; they might combine this with an attack West of Metz (as they attempted in 1914), or merely deploy weak forces on that side to delay a German advance with a counter-attack later.[1]

Instructions of O.H.L. to Crown Prince Rupprecht

The instructions of O.H.L. (the Supreme Command) to Crown Prince Rupprecht, as senior officer of the left wing, were contained in an "*Aufmarschanweisung*" (Deployment Directive), of which the following are the essential paragraphs.

"The protection of the left flank of the main array will be provided by the fortresses of Thionville and Metz and by such portion of the forces as will concentrate in the Reichsland South-East of Metz.[2] The forces which will concentrate in the Reichsland South-East of Metz (III Cavalry Corps, Sixth Army and Seventh Army) will be under the command of the senior of the two Army commanders. The mission of this senior commander is to advance towards the Moselle below Frouard [North-West of Nancy] and towards the Meurthe—capturing the fort of Manonviller en route—in order to detain the French forces assembled in that area and prevent their transport to the left of the French Armies.

"This mission will lapse if the French themselves advance to the attack between Metz and the Vosges with superior forces. If the forces in the Reichsland are compelled to retire by this action, its movements are to be arranged so as to prevent any danger—by envelopment of the Nied position[3] by the French—to the main German array. The Sixth Army will therefore, in case of need provide troops to reinforce that position.

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[1] See *Schlieffens Vermächtnis*, published by the Great General Staff.

[2] The Reichsland comprised the part of Alsace-Lorraine conquered from France in 1870–1.

[3] Along the French Nied.

"If the Sixth and Seventh Armies do *not* encounter superior forces, the intervention of a portion of the Sixth Army and of the III Cavalry Corps in the fighting on the left bank of the Moselle, via Metz or South of that fortress, may have to be considered. The commander of the two combined Armies will decide in what degree he must bear this possibility in mind in the arrangement of his march towards the Moselle and the Meurthe. The commander of the Fifth Army will be kept constantly informed.

"If a French offensive develops in Upper Alsace, it will not be unfavourable for the operations as a whole, provided the enemy does not cross the line: Feste Kaiser Wilhelm II (West of Strasbourg)—Breusch position—Strasbourg. To hold this line, and prevent it from being outflanked West of the Feste Wilhelm II is the particular task of the Governor of Strasbourg.

"The protection of Upper Alsace and the southern part of Baden during the concentration is the business of the commander of the Seventh Army. The mission of the commander of the Seventh Army in Upper Alsace and in the southern part of Baden is a temporary one. The commander of the combined Armies in the Reichsland will take care that, as much as possible, the Seventh Army shall be employed to co-operate directly with the Sixth Army. The covering of Upper Alsace must not lead to the sacrifice of the Seventh Army, or parts of it, to a superior enemy force, which may possibly make an early advance from Belfort in co-operation with a French offensive between Metz and the Vosges. It is more likely that the Seventh Army will be called upon to repel a premature thrust of weak enemy forces and ensure that the home territory will not be abandoned helpless to any enemy enterprises. In his arrangements the commander of the Seventh Army will have to distinguish between a partial attack by inferior enemy forces and a planned advance of strong French forces from Belfort and North of that place. If the advance of superior enemy forces in Upper Alsace becomes evident, all the resources of the country are to be removed. The troops of the Seventh Army will be withdrawn on Strasbourg (XV Corps), and to the right bank of the Rhine (XIV Corps). At this moment at the latest, the Seventh Army will release as many of its troops as possible for direct co-operation with the Sixth Army. In which direction their movement will be effected and whether by march or by railway, must depend on the manner in which events have developed in the Sixth Army."

The G. 1 (Operations) of the Sixth Army (now General Mertz) states that after reading this Directive he racked his brains all night to discover what was meant. Next morning the Major-General G.S. (General Krafft

von Delmensingen) asked Mertz what he thought of the Directive. He replied: "If one of my students at the Staff College had served up to me a Directive like this, so involved and so full of restrictions, I should have had grave doubts of classing him as fit for the General Staff. But I see one great merit in the Directive; it leaves us to do pretty well as we like." It was obvious that the Army Commander and M.G.G.S. did not agree with the G. 1, for they invited him to say how he would have written the Directive. He then read his draft, the essential part of which ran: "The Sixth Army will in the first place ensure the protection of the left flank of the array. Its later missions will probably be facilitated if it retains in reserve a considerable force, whose future employment will depend on the further development of the situation. The employment of the Seventh Army will be arranged on the same principles." He insisted on the essential pre-eminently defensive nature of the operations required.

No one of Sixth Army Headquarters (then in Munich) seems to have thought of enquiring of O.H.L., then still in Berlin, what was intended, and O.H.L. sent no one to explain.

Memorandum by the Chief of Staff

In the spirit of a staff exercise or promotion examination, the Chief of the Staff proceeded to elaborate a memorandum, which takes up four-and-a-half pages of small print,[1] headed: "*Thoughts on the First Operations of the Sixth and Seventh Armies on the basis of the Deployment Directive.*"[2] In this memorandum the common task of the Armies in the Reichsland was declared to be threefold:

"(*a*) To advance towards the Moselle below Frouard and towards the Meurthe in order to hold fast the enemy forces which may concentrate there and prevent their transport to the decisive wing.

"(*b*) Should the enemy advance and initiate a great offensive eastwards past Metz: to withdraw and prevent the envelopment as well as the break-through of the prepared Nied position.[3]

"(*c*) Should no strong forces be encountered on the Meurthe: to conduct an offensive through and South of Metz on the West bank of the Moselle (a later advance against and over the line Epinal—Nancy is not foreseen in this case).

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[1] Mertz gives only extracts. It is printed in full in Gackenholz.

[2] This memo was sent to Berlin on the 8th and is preserved with the marginal notes of General von Moltke, amounting in all to 47 words.

[3] "This is the business of the Fifth Army" was Moltke's marginal comment. There is no evidence that his remarks were communicated to the Sixth Army.

" The Seventh Army has, besides, the special mission of covering Upper Alsace against an irruption of weak enemy forces.

" In face of a powerful enemy offensive in Upper Alsace this territory will be abandoned, but the Breusch position held ; as many troops as possible will be released to co-operate with the Sixth Army.

" In face of all these special tasks which really concern the execution of the fundamental idea, there is one point of which sight must never for a moment be lost : the group of Armies in the Reichsland is charged with ensuring without fail the safety of the left flank of the decisive group. Whatever happens, it must afford the decisive group full time to deliver its blow in France and Belgium, or in the case that the mass of the French Army should turn against the troops in the Reichsland, to give it time to wheel to the South and come to their assistance. The group in the Reichsland fights in the first place to gain time and not to obtain a decision by arms."

The conclusion arrived at by Krafft von Dellmensingen was as follows : " The first task of the Sixth Army, in which the Seventh must equally participate, will have the character of a demonstration (this was his way of finding out whether the French were " in superior force," an indeterminate factor on which future action depended) which must be conducted in such a manner that, if necessary, it can at any moment be transformed into its contrary operation—a retirement before a strong attack. It may be asked how the Sixth Army can be equally prepared to deal with the case, in which it may find itself, of having to wheel towards the Meuse. The task is extremely difficult. In particular, the passage from a demonstration to a retirement is practically one of the hardest problems. It makes the highest demands on the troops. But German troops should be able to execute it."

Claims of German Victory at Mulhouse Exaggerated.

General von Krafft's meditations were disturbed by the French incursion into Upper Alsace on the 7th August. The Seventh Army rose to the fly and forthwith sent its two active corps South to deal with the invader, and on the 10th reported a brilliant success. Krafft, who on the 9th had come to the conclusion that the French " would probably march against Belgium with their main forces," sat down to write another long appreciation of the situation entitled : " Views and Intentions of the Commander in the Reichsland for the next Operations of the Sixth and Seventh Armies." After providing for reconnaissance, as no information had come in about the French on the front of the Sixth Army, he decided to concentrate the Sixth Army, then spread out along the frontier, on its right and advance towards the Meurthe. To guard its left as it

moved forward, two corps of the Seventh Army, now free as a result of its victory, were to cross the crest of the Vosges on the 15th, the XIV Corps being moved North by rail to fill the gap between the two Armies. The " Chef's "[1] meditations were again upset. General von Heeringen, commander of the Seventh Army, reported that the French were not so decisively beaten at Mulhouse as he had thought; that his Army " urgently required rest "; that it was unfit to meet the French VII Corps again; and that it was unsafe for him to make a march over the Vosges. He refused to move as suggested without a direct order. Krafft woefully records: " The previous reports spoke of ' a retreat resembling a flight,' and ' a great victory.' This unfortunately was not confirmed." Sixth Army headquarters moved to St. Avold (25 miles East of Metz) on the 9th, and one of the staff, sent to the Seventh Army, brought back the " little-cheering news that, owing to battle and heat casualties, the Seventh Army was thoroughly exhausted."

It may be interpolated that General von Heeringen was a much older man than Crown Prince Rupprecht and had recently been Minister of War. His Chief of the Staff, too, was older and senior in rank to the Crown Prince. This did not tend to smooth working.

After this rebuff the " Chef " sat down to pen another appreciation, in which he admitted that by their incursion into Upper Alsace and by drawing the Seventh Army there the French had gained " a pretty considerable strategic success "; for if the French attacked the Sixth Army, it would now be many days before the Seventh Army could come to its assistance, and if they did not, the German advance to the Meurthe must be postponed until the Seventh Army came North again.

German Success at Lagarde

Krafft was cheered on the 11th by a small success at Lagarde, in which a Bavarian brigade and a cavalry brigade cut up a French composite brigade; " the number of prisoners, war trophies, etc., was considerably greater than at Mulhouse." On the other hand, a captured order showed that General de Castelnau's Army, with five named corps, was opposite the Sixth Army. Krafft regarded this French assembly as a demonstration such as he himself had proposed to carry out, but other members of the General Staff of the Sixth Army thought otherwise. So on the 12th, Krafft drew up a fourth appreciation, at the end of which he came to a definite conclusion. It was to bring the three corps of the Seventh Army closer to the Sixth Army, but behind its left and by protected routes, the XIV and XV from the Mulhouse region by rail on both

[1] The chief general staff officer of a German Army or corps was spoken of as the " Chef."

sides of the Rhine to Strasbourg, and the XIV Reserve Corps by three short marches to the Breusch position.[1] From these areas of assembly he proposed to move the corps up to the right of the Sixth Army and then go forward for his " demonstration."

O.H.L. was informed of this intention, and then asked two direct questions : first, " was the advance to the Moselle and Meurthe line still to be carried out ? " Secondly, " when might the offensive be begun ? " Moltke replied three hours later by a formal order :

" His Majesty orders : An advance of the Sixth and Seventh Armies over the Moselle between Metz and Frouard and over the Meurthe is *not* in the interest of O.H.L. An advance against this line is foreseen in the directive for deployment, but only under the condition therein laid down.

" Destruction of Fort Manonviller is desired as soon as the situation permits. Super-heavy howitzers are allotted to the Sixth Army.

" Arrival [in position] of the Armies [which are] North of Metz [will take place] only after interval of a few days. Date will be communicated."

Warning Order from Sixth Army

The receipt of this guarded reply led the General Staff of the Sixth Army to issue a " Directive " (we should call it a " warning order ") timed midday, 13th August. It will be translated in full : " The common task of the troops in the Reichsland is : protection of the left flank of the array. For this purpose, the Sixth and Seventh Armies may be called upon to advance against the Moselle below Frouard and against the Meurthe in order to hold fast any enemy who may be there. This task may lapse should the enemy move offensively against us with strong forces. It may then be possible that the Sixth Army will for a short time have to evade a decisive battle.

" *Intention :* The Sixth Army, including the I Bavarian Reserve Corps, will be ready for action to-morrow, 14th August. For the moment an advance of the Sixth Army is not in the interests of O.H.L. Which of the above named tasks it will be called upon to carry out cannot yet be foreseen. It is intended first to await the arrival of the Seventh Army, which will be assembled partly by rail in the area East of the Saarburg—Blamont road and near Strasbourg. In the meanwhile the Army will defend its positions against hostile attack and not challenge a fight without good reason.

" Preparations for the capture of Manonviller will be made by the I Bavarian Corps, but operations against it will only begin simultaneously with the advance against the Meurthe.

[1] That is from Feste Kaiser Wilhelm II to Strasbourg.

"Retirement before the enemy can only come into question when absolute necessity for it arises. For the moment there is no sign whatever of this. In any case, the corps must be so grouped that they have their rear free and that their movements cannot in any way be impeded by Army road traffic.

"The first directions for the allotment of zones have already been given in the order of the 11th August; in it, deployment areas were placed at the disposal of the corps. These indicate the direction of any retirement. Careful reconnaissance of roads is required. In such a case the utmost care must be taken by commanders to explain to all ranks that it is only a matter of a *temporary* movement to the rear, in order to gain time for the arrival of other troops to deal a decisive blow, and to deprive the enemy of an opportunity of winning some cheap laurels, and that the retirement will be quickly followed by an advance to the attack. All means must be employed to ensure that the wonderful delight in battle, spirit, morale and good order of the troops suffer no harm.

"The loss of connection with Metz and the Nied position must be avoided without fail. The latter position, between Kurzel and the junction of the Nied with the Saar is being constructed by labour battalions. The Army is spread over a wide front. It is therefore particularly important to keep up constant lateral communication. In this the Army cavalry will specially co-operate; it will fill gaps and protect the flanks of isolated units from envelopment. The closest co-operation with the several corps is necessary. Detachments of the Army cavalry will for this purpose be temporarily attached, if necessary, to Army headquarters or even to corps."

By the 13th August, Lieutenant-Colonel Hentsch (of Marne fame), the head of the Intelligence Branch at O.H.L., calculated that there were three French Armies containing at least twelve corps[1] on the Epinal—Nancy front, which indicated that the French would make their principal effort in Lorraine. Moltke, fearing a rash offensive of Crown Prince Rupprecht, telegraphed to him, repeating his warning of the previous day that "a premature offensive of the Sixth and Seventh Armies was not in the interest of the operation as a whole. . . . In the event of the advance of very superior enemy forces it will be the task of the Sixth and Seventh Armies to fall back between Metz and the Vosges."

So Krafft on the 14th (morning) issued another Directive (two-and-a-quarter pages of close print). He gave the information which he had received, but stated that there were fifteen enemy corps in and behind the line Pont à Mousson—Raon l'Etape, and stated that the Armies

[1] Actually 9 and 2 groups of Reserve divisions, that is 24 divisions.

would withdraw before the advance of a very superior enemy to the line Pfalsbourg—Sarrebruck—Sarrelouis.[1] An offensive would be carried out should large portions of the enemy now on their front march off or be sent away by train. It was the business of the cavalry and airmen to discover what the enemy was about ; and as the enemy might move by night, the early morning and late evening were recommended as the best time for air reconnaissance. The practical part of the directive lengthened the corps areas to the rear. Only " quite small demolitions " were to be executed in the retreat, and the railways were not to be destroyed at all.

French Success at Diespach

On the 14th came the news of indications of a general French advance and the destruction at Diespach (27 miles South-West of Strasbourg), with nearly two thousand casualties, of a German force of 6 battalions and 3½ batteries. The feelings of elation roused by the fight at Lagarde were correspondingly depressed. By telegram all available troops of the XIV Corps (Seventh Army) were ordered to Sarreburg near the right of the defence line Pfalsbourg—Saarelouis. But, contrary to orders, the Seventh Army, whose XIV and XV Corps were still near Mulhouse, with its XIV Reserve well South of Strasbourg, finding that the French First Army was advancing, had made preparation to front West, roughly on the line Colmar—Strasbourg. Crown Prince Rupprecht ordered it, with all possible forces, to prevent a break through between Strasbourg and Pfalsbourg, the right of the Sixth Army defence line ; but during the day the XIV Reserve Corps halted and faced West, the XV Corps, whose railway arrangements had failed, proceeded by march towards Colmar ; the XIV Corps, however, began its movement northwards by rail on the East bank of the Rhine.

At 9 p.m. (14th) Krafft issued an operation order :

" 1. By the advance of the enemy in the Vosges the XIV Corps is detained in the Rhine valley. On our front the enemy has attacked the XXI Corps, also moved against the I Bavarian Corps. The latter has retired behind the line Avricourt—Blamont—Cirey.[2] In the evening the advance of enemy detachments from the Donon on Alberschweiler (northward of Schirmeck) took place.

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[1] As defined and shown on the attached map, the ends of the line were turned forward a little so as to create short flanks ; from Pfalsbourg to Lutzelburg, about 3½ miles, and from Sarrelouis to Bousonville, about 9 miles.

[2] That is back to the line on which it orginally deployed. See map facing p. 62, on which Blamont only is marked.

" 2. To-morrow, unless a strong enemy attack develops further, the Army will begin to retire in order to avoid a decisive battle.

" 3. As a result of the absence of the XIV Corps, the following changes in the allotment of zones for retirement are necessary [omitted].

" 4. III Bavarian and II Bavarian Corps will hold their present positions.

XXI Corps will withdraw its front to behind the Seille, without, if possible, losing touch with II Bavarian Corps. In conjunction with the Bavarian and 8th Cavalry Divisions, it will block the area between the Linder Weiler and the Stock Weiler [these are two lakes East of Dieuze]. This group will be under G.O.C. III Cavalry Corps and will keep in touch eastwards with I Bavarian Corps.

I Bavarian Corps will retire with left wing in direction of Sarrebourg, but not, if possible, beyond the Rhine—Marne Canal. It will drive back the enemy reported at Alberschweiler (North of Schirmeck). The 7th Cavalry Division is placed under it to cover the left wing East of Sarrebourg.

I Bavarian Reserve Corps will march by Sarrealben and Sarreunion to Weyer and by Ormingen and Diemeringen to Sieweiler. [Weyer and Sieweiler lie one mile apart eight miles North-West of Pfalsbourg.] It will support the left flank of the Army. Should troops of the XIV Corps arrive via Saverne they will come under the orders of the G.O.C. I Bavarian [Not I Bav. Res.] Corps.

" 5. [Deals with the trains of the I Bav. and I Bav. Res.]

" 6. Army headquarters remain at St. Avold."

The movements ordered were " carried out [on the 15th] according to plan. They were not particularly disturbed by the enemy."

German Orders for Withdrawal

During the morning of the 15th, there arrived for Krafft a long letter written on the 13th by Lieutenant-General von Stein, the Deputy C.G.S., by Moltke's direction (sent off on the morning of the 14th), with a postscript by Moltke, " I concur in the above points of view." Stein warned Krafft that a serious offensive in Lorraine was probable, and suggested, but did not order, a retirement, not keeping touch with the Nied position, but to the Upper Sarre (Sarrebruck to the Saverne Pass), leaving the Middle Sarre area open. He promised some mobile *Ersatz* divisions, and offered some wholly superfluous advice as to the size of the columns in the retirement, saying that columns of whole divisions were

easier to control than a number of smaller ones. An attached summary confirmed the information regarding the presence of strong French forces behind the line Pont à Mousson—Raon l'Etape.

The Sixth Army seems at last to have been convinced that it could not stop where it was. On the morning of the 15th, O.H.L. telegraphed to the Seventh Army (headquarters Strasbourg) to the effect that " the rapid assembly of strong forces at Pfalsbourg and southwards was urgently necessary." Crown Prince Rupprecht also impressed on General von Heeringen by letter (their headquarters were 60 miles apart by rail and less by road) the necessity of assembling the XIV Reserve and the XV Corps between Saverne and Feste Kaiser Wilhelm II as soon as possible ; so, although the frontier guards in the Vosges were being pressed back by the French, General von Heeringen ordered the movements desired.

Thereupon Krafft issued yet another Directive (time not given), dated 15th August :

" 1. There is now a great probability that the enemy is assembling the mass of his Army in and behind the line Toul—Epinal, and that a great offensive between Metz and Strasbourg is imminent.

" 2. By higher decision, great importance is no longer laid on direct touch of the Sixth Army with the Nied position. The Army will therefore retire to the Upper Sarre to the line Sarrebruck—Sarrebourg, connecting to the XIV Corps, whose left flank is supported on the Vosges, and this line will be prepared for serious resistance. The space between Sarrebruck and the Nied position will be filled by O.H.L. with second-line troops. The III Cavalry Corps will go back there in its own time.

" 3. The resistance offered during the retirement should aim as far as possible at keeping the enemy from the position it has been decided to hold. On the left wing, the resistance should be very determined. All corps have so to arrange their withdrawals that a counter-march will be at once possible should the enemy alter his attitude, and that sufficient time is given for the thorough strengthening of the position."

At 8 p.m., Krafft issued the following Operation Order. He had in his mind to make the retirement to the Sarre in three stages :

" 1. The enemy has not attacked in front of the III Bavarian or II Bavarian Corps. Against the I Corps he has so far, in general, only brought artillery into position. South of the line Vic—Bourdonnay, strong such forces have been observed. Against the I Bavarian Corps the enemy has brought strong forces, apparently two corps, which have pushed on to the line Leintrey—Blamont—Cirey. Other forces have advanced against Schirmeck.

"2. The Army will be withdrawn behind the Sarre line. Right flank South of Sarrebruck, left at Rieding [a little West of Pfalsbourg]. The XIV Corps will join in to the left wing in the direction of Garbourg [6 miles South-West of Saverne].

"3. [This detailed sectors to the different corps.]

"4. The corps will retire to these sectors in the course of the 15th–18th. Their reconnaissance is to begin at once, their strengthening as soon as possible, if necessary by sending troops on in advance, and is to be continued with all available means.

"5. The I Bavarian Reserve, I Bavarian and XIV Corps have already taken up positions in the course of to-day, and will strengthen them, starting on the morning of the 16th. The III Bavarian, II Bavarian and XXI Corps will withdraw to their positions beginning on the 16th.

"6. [This assigned march areas.]

"7. The Bavarian and the 8th Cavalry Divisions, including the attached Jäger battalions, in conjunction with the rear guards, will cover the retirement of the Army and will withdraw before the 18th to the right flank of the Army in the space between Sarrelouis and the Nied, but will continue reconnaissance towards the line Pont à Mousson—Blamont. Penetrations of enemy cavalry between the right of the Army and the Nied is to be prevented. The 7th Cavalry Division remains at the disposal of the Cavalry Corps.

"8. The Army troops will precede the corps to which they have been attached for movements and rations, and will march to their defence sectors; until further orders they will remain there at the disposal of the corps commanders. The anti-balloon guns will march with the XXI Corps; further orders will be given about them when they reach the defensive position. The Army troops in St. Avold will receive orders direct from Army headquarters.

"9. and 10. [Dealt with ammunition columns and trains and billeting areas behind the defensive sectors.]

"11. Army headquarters remain at St. Avold during the 16th and move during the morning of the 17th to Ingwiller [15 miles North-East of Pfalsbourg]. From 8 a.m., telephone messages will be sent to the latter place. Army headquarters guard, one battalion 5th Reserve Division."

Indecision at Sixth Army H.Q.

In the course of the 15th, doubt and wavering had again arisen at Sixth Army headquarters, especially when the Chief of the Staff of the Fifth Army objected to the retirement to the Sarre, as it would endanger the main operation at its pivot. (O.H.L. did not seem to think so), and

the rearward movements of the Sixth Army trains would clash with the assembly of the trains of the Fifth Army, which had not yet been completed. Doubt also arose as to whether O.H.L. was right in its deductions about the distribution of the French forces.

On the 16th, the short retirement of the III and II Bavarian and XXI Corps was carried out—the XXI moving by night, without interference, the XIV Corps reached Sarrebourg, and the XIV Reserve and XV Corps began to assemble near Strasbourg.

Again Sixth Army headquarters suffered from an attack of " severe wavering." O.H.L. sent the information that " the enemy forces opposite the Sixth and Seventh Armies were thought to be less than first estimated and therefore a decisive operation in Lorraine appears doubtful." The French were clearly advancing between Metz and Strasbourg, but slowly and with great precaution ; in the Vosges pressure had ceased. The question was, should the retirement of the Sixth Army on the 17th be continued or stopped. It was decided to stand fast, and shortly after, O.H.L., by the mouth of Lieutenant-Colonel Tappen (Operations), expressed the wish that the Sixth Army should not go back to the Sarre in a single bound. Then doubt arose as to whether the French were not merely trying to hold the Sixth and Seventh Armies fast in Lorraine, as the latter were trying to do with them. It was suggested that the enemy " wedge " should be attacked from two sides. The attitude of the French on the 16th allowed of no conclusion being drawn, perhaps a battle would clear matters up ; the Sixth Army would advance on the 18th. General von Heeringen was informed that an early offensive was not excluded. He replied that the Seventh Army would not be ready before the 20th. No decision to attack was arrived at, and at 8 p.m., a halt order was issued : " The Army will remain to-morrow (17th) until further orders in the positions reached to-day."

On the 17th the Sixth Army, therefore, halted and dug in, and the day passed quietly. The proposal to attack gained support. The idea now was to throw most weight into the eastern flank and envelop the enemy's right, parts of two corps of the Seventh Army moving down the Breusch valley and into the passes of the Vosges. An officer was sent to General von Heeringen, who agreed to take part ; but, as his men were tired after their incessant movement, he stated that the earliest possible date was the 19th. On the 17th, opposite the northern wing the French halted ; elsewhere they felt their way forward slowly and cautiously, and there was only small contact-taking fighting. The Seventh Army completed its assembly on the southern flank of the Sixth as shown on the sketch map.[1]

[1] See page 62

At 6.0 p.m. arrived by telephone the O.H.L. order: "His Majesty orders: The advance of the First to Fifth Armies will begin on the 18th August in accordance with the deployment instructions.

"Sixth and Seventh Armies and III Cavalry Corps, under command of the G.O.C. Sixth Army, have the task of safeguarding the left flank of the array. The general position of their corps is to be reported daily."

This order occasioned great perturbation at Sixth Army headquarters; five other Armies were moving to the attack and the Sixth and Seventh Armies were left without distinct guidance. Crown Prince Rupprecht and his advisers were in favour of instant (*alsbaldiger*) attack instead of further withdrawal. O.H.L. seems to have expected this result; for it had despatched Lieutenant-Colonel von Dommes to warn the commander of the Sixth and Seventh Armies against rash action. He arrived at St. Avold, about "midnight," say some; "in the late evening hours," say others. Like the case of the mission of Lieutenant-Colonel Hentsch to the right wing at the Battle of the Marne, there is dispute as to what exactly was said, as well as to the time of Dommes's arrival, which no one gives in clock hours. One thing is certain, he neither gave nor brought an order. In fact, he opened the interview by saying that he brought no order from O.H.L., and had only to offer stimulating hints (*Anregungen*). These hints, according to the Official History, were: "It was no longer a matter of meeting the attack of the main French forces; but the advance of considerable minor forces into Lorraine should be reckoned on. It was recommended that the operations against these should be conducted as proposed in numerous peace studies, namely at first by retiring in the direction of the Sarre and the Vosges, and then by attacks on the flanks, decisively defeating the enemy who had penetrated. A warning was given against attack from the present [forward] position as the proximity of the French barrier fortresses would prevent the exploitation of victory."

Soon after this account was published, Krafft raised objections to it and proposed that the latter part should be amended in a new edition to read: "Namely at first the Sixth Army should retire in the direction of the Middle Sarre in order, in touch with Metz and the Nied position, to check the advance against the main German forces and then, if possible, by attack on the flanks to beat the foe who had penetrated. A warning was given against an attack from the present position, which would principally have to be a frontal one, for the danger existed of being exposed to the blows of French masses held in reserve and, even in case of a victory, exploitation would be prevented by the proximity of the French barrier fortresses." Lieutenant-Colonel von Dommes, when

referred to by the Official Historians, said that he, " then as before recommended the plan of Colonel-General von Moltke to retire further."

Crown Prince Rupprecht's diary fully supports the correction proposed by Krafft. It contains the additional information that Dommes said " the O.H.L. appreciation is that we have certainly somewhat superior forces opposite, but that the French are in course of strengthening their northern wing, where the British have not arrived as expected.[1] There is no more question, said Lieutenant-Colonel von Dommes of the ' sack ' formed by the Nied and the Sarre positions, mentioned by General von Stein in his letter . . . the Nied position is occupied by the Landwehr troops and guns intended for it. The garrison is certainly very thin." According to his diary, the Crown Prince Rupprecht concluded the interview with Dommes by saying : " If O.H.L. do not send me a distinct order to the contrary, I shall attack. If a retirement is made to the Nied (*sic*) position, the Breusch position, on the maintenance of which O.H.L. lays weight, cannot probably be held if the enemy should penetrate into the gap between the Sixth and Seventh Armies. . . . Other things apart, yesterday and to-day would have been most favourable for attack whilst the enemy was squeezing through the defiles between the lakes and the Sarre coal canal. Unfortunately, our offensive had to be put off to the 19th in view of co-operation with the slowly moving Seventh Army."

The Official History continues, after the above-quoted account of the Dommes interview : " The variations [the same German word is used for the barometer] at O.H.L. in the appreciation of the situation, which may, perhaps, be attributed to differences of opinion between the leading personalities, made an uncommonly heavy burden for the G.O.C. Sixth Army."

The Crown Prince Rupprecht pointed out the possible bad effect of retirement on his troops and said that without the assistance of the Fifth Army an annihilating blow could not be struck at the French who, in fact, would gain by a German retirement. He had already issued orders for the 18th and he let them stand. The essential paragraph of the orders is :

" 2. The corps of the right wing will remain to-morrow in their positions. Line of resistance as ordered for 17th.

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[1] Dommes also said on the night of the 17th : " The British have not completed mobilization and therefore have not landed on the Continent." The British official history says, " Between the 12th and 17th August British troops had been passing across the Channel and disembarking on French soil. . . . On the 14th and the following days the troops began to move up by train to the areas of concentration."

" The troops in and West of the Sarre position will improve their defences by every means. The position must be brought to the highest degree of resistance of a field position. Advanced troops will cover the work and withdraw to the position only under pressure of the enemy."

The 18th August also passed " without the situation being cleared up. The French pushed forward only a few kilometres." During the morning General von Heeringen, as desired, ordered for the 19th " the attack of the Seventh Army against the eastern wing and flank of the enemy advancing against the Sixth Army." The XIV Corps was to keep touch with the left of the Sixth Army, the XV to advance westwards from Wasselnheim, the XIV Reserve (with 30th Reserve Division and 19th *Ersatz* Division attached) north-westwards over the Donon. Three *Ersatz* divisions allotted to the Sixth Army were assembling, North-East of St. Avold, at Sarrelouis, and nine miles South-West of Sarrelouis, respectively. Without counting *Landwehr* and the Metz-Strasbourg garrison, the Germans had now a slight numerical superiority, 21 divisions against 19.

Krafft got into telephone communication with General von Stein at O.H.L. in order to make sure that there was no objection to the Sixth Army attacking. Stein replied that the outcome of the first great battle was most important, and that the responsibility for the execution of the task of the troops in the Reichsland, the protection of the left flank of the right wing, whether it was offensively or defensively solved, could not be taken from the shoulders of the Army Commander. But he did not forbid the attack. So Crown Prince Rupprecht finally decided upon the offensive, although no assistance from the Fifth Army, it was ascertained, could be expected. It remained only to fix the time of the beginning of the attack.

The following entry was made in the O.H.L. records by Colonel Tappen. " The Deployment Instruction put three cases before the Sixth Army :

" (*a*) If French forces do not advance over the Lower [? Upper] Meurthe and Moselle below [? above] Nancy, the Sixth and Seventh Armies have to advance to this line to hold fast any French forces found there.

" (*b*) If strong French forces advance against Lorraine so early that the deployment according to plan of the German main forces North of Metz seems endangered, the support of the Sixth and Seventh Armies by the Fifth was likely.

" (*c*) If a French attack was made only later, the Sixth Army had the task of protecting the left flank of the array in conjunction with the fortress of Metz and the Nied position."

The entry continues that, by the 16th, it was clear that the main French forces were " by no means " in Lorraine. Case (*c*) therefore applied, and Colonel Tappen telephoned to Krafft to this effect, and Lieutenant-Colonel von Dommes was sent " to exert influence (*wirken*) in this sense." Thus Crown Prince Rupprecht was left to make his decision. He postponed it, as the order for the 19th, issued on the previous evening, ran : " The Army will remain to-morrow in its positions, which it will defend against any enemy attack."

On the 19th, the gap between the XXI and I Bavarian Corps was filled up by bringing up the 1st and 5th Bavarian Reserve Divisions ; the activity of the French increased. In Lorraine, where it is estimated their forces amounted to eight corps (actually six and one group of Reserve divisions on the western flank)[1], they " also advanced against the western wing of the Sixth Army." Opposite the III and II Bavarian Corps they deployed ; with the XXI a heavy artillery duel developed from time to time ; opposite the I Bavarian Corps the French crept forward to the Saar. The XIV and XV Corps attempted to push forward, but only reached their deployment positions with difficulty. The XIV Reserve Corps on the other hand, drove the French back from Schirmeck. Along the Vosges the frontier guards were pushed back and Mulhouse was lost again. In the afternoon, the attack order for the 20th was approved. But, according to Mertz, before it was issued, Krafft manifested sudden fear of an enemy break-through in the I Bavarian Reserve Corps area, and of a strong attack from the direction of Nancy against the right flank when the advance began. Both officers became " excited " ; and an alteration in the task of the I Bavarian Reserve Corps was made.

German Orders for Attack

The attack order was not issued until 7.30 p.m. It ran :

" 1. Enemy stands with weak advanced troops on the line Delme ridge [North-East of Delme]—Serres Wood [North-West of Château Salins].[2] The presence of strong forces in rear and to the South-West is questionable. Before the II Bavarian Corps the enemy has pushed forward to the line Bréhain [6 miles East of Delme]—South-West edge of the Forest of Dieuze [an extensive wood North of Dieuze]. In front of the right wing of the XXI Corps, he apparently stands in the forest and

[1] In addition, three divisions and two Reserve divisions of the First Army, spread out, guarded the eastern flank in the Vosges, down to about Colmar, with the " Army of Alsace " further South.

[2] Thus in Mertz's and Gackenholz's books, in which the order is given in full. In others the words " opposite the III Bavarian Corps " are added.

at Bebersdorf [8 miles North-East of Dieuze]. In and South of the area Rohrbach—Bisping [8 miles East of Dieuze] are forces of at least a division. The I Bavarian and XIV Corps have been attacked by about 2½ corps. The enemy seems to be thrusting his main force against the right flank of the I Bavarian Corps

" Our XV Corps is pressing forward by Dagsburg [9 miles South-West of Saverne]. There appear to be only weak forces in front of it. In the Vosges South of the Donon parts of the Seventh Army are in victorious advance.

" 2. The Sixth and Seventh Armies will move to the attack to-morrow (20th). Dividing line between the Army [three small places are named : comprising the line Sarreunion—Baccarat, and passing between the I Bav. Res. and I Bav. Corps].

" 3. The I Bavarian Corps is placed under the G.O.C. Seventh Army.

" 4. [Gives the direction of attack of the corps of the Sixth Army, a convergent movement, the III Bavarian Corps on the right being directed South on Delme—Château Salins, and the XXI South-West ; the I Bavarian Reserve Corps was to protect the left flank of the XXI and " prevent a break through of the enemy through the woods on either side of Mittersheim " which is 9 miles South-West of Sarreunion.]

" 5. The troops will advance at 5 a.m. simultaneously and by surprise over the line Baudrecourt—Lesse [both just in front of the III Bavarian Corps] as well as from the present defensive positions."

Instructions to French First and Second Armies

The orders given to the French First and Second Armies by *Instruction Générale* No. 1 of the 8th August were[1] : " The First Army will take for its objective the German forces which occupy the region of Sarrebourg, the Donon and the Bruche (Breusch), and will seek to throw them back on Strasbourg and Lower Alsace. This attack will be facilitated by the progress of the VII Corps [later Army of Alsace] launched on the 7th August, which should proceed in the direction of Colmar and Schlestadt."

" The Second Army, covering itself on the Metz side, will act offensively in the general direction of Sarrebruck on the front Dieuze, Château Salins and Delme, connecting to the First Army in the region of the lakes." It was to keep in reserve North of Toul, at the disposal of the Commander-in-Chief, its two left corps ready for action facing North.

On the 13th August G.Q.G. issued orders for the offensive to be begun on the 14th by the First Army, supported by the two right corps of the

[1] See *French Official History, Volume* 1, pp. 156-7.

Thionville
Bouzonville
R. Nied
METZ
Kurzel
III B
St Avold
III B.
II B
Pont à Mousson
II B
Delme
20th
Morhange
Château Salins
XXI
Dieu
Frouard
NANCY
Toul
Lunéville
R. Meuse
R. Meurthe
Baccar
Charmes
Rambervill
ALSACE-LORRAINE
AUGUST 1914
Miles
10
5
0
10
15
20
EPINAL
German front on 14th
moves on 16th
front on 17th
Line to which German retirement should have been made.
French front on 17th
" " 24th
Frontier
Defended areas
Forts
Vosges area
(the frontier followed the crest as far North as the Donon.)

Sarrelouis
A. Sarre
SARREBRUCK
Sarreguemines
Sarralben
Sarreunion
Dieuze
Phalsbourg
Canal
Sarrebourg
Saverne
Logarne
Blamont
Avricourt
Baccarat
Raon l'Etape
Rambervillers
Bruyères
Wasselnheim
STRASBOURG
Oberehnheim
R. Rhine
Schirmeck
Sleslat
Colmar
Mulhouse
BELFORT
BALE
IB
IIB
IB.B
IB.R
XXI
XV
XIV R
XIV R.
XIV

Second. The enemy was to be attacked wherever met and pursued by the First Army to just beyond the line Sarrebourg—Obersteigen (9 miles South-West of Saverne). The First Army was then to consolidate the front and organize on the Donon a vast *place d'armes*, to command the Breusch valley. As soon as the enemy was in retreat, the Second Army was to wheel towards the North to attack against the front Dieuze—Château Salins. General Dubail (First Army) directed his Army " to act methodically, to organize its attacks in depth, well supported by artillery and combined with enveloping attacks." General de Castelnau (Second Army) " always careful to advance with as little loss as possible," recommended advance by " bounds," supported by a powerful artillery.

(Part II.—*The Battles* will appear in next quarter's JOURNAL.)

NAVY, ARMY, AND AIR FORCE INSTITUTES IN WAR AND PEACE

By Captain Donald Anderson, late 6th Rajputana Rifles.

In 1939, for the first time in history, a major war began with the British fighting forces in possession of a canteen organization capable of operating immediately anywhere in the world. With the expeditionary force which went to France a few months back went also all the personnel, equipment, and stores needed for supplying officers and men with every canteen facility that they had grown accustomed to in peace. The credit for preparing this organization is due to the Board of Management of the Navy, Army, and Air Force Institutes.

The N.A.A.F.I. was born in 1921 from the ashes of the liquidated canteen organizations built up during the Great War of 1914–1918. It received a charter as an association not trading for profit, and its duties were to provide canteen facilities for the Royal Navy, the Army, and the Royal Air Force, wherever asked for, in peace and in war. A history of the canteens of our fighting forces from the earliest times has now no more than an antiquarian interest; besides, that history has already been very adequately written by the late Sir John Fortescue in his *A Short Account of Canteens in The British Army*, published in 1928.[1] Nevertheless, the present problems and their methods of solution will be better appreciated if the outline story of our canteen services is told from 1914 onwards.

The mobilization of the B.E.F. in 1914 and its shipment to France showed one of the finest examples of good organizing ever known; how surprising, therefore, it is that no arrangement was made for canteens to go with that force, in spite of ample lessons in their need from previous campaigns; indeed, the only mention of canteens in Mobilization Orders dealt with the winding-up of peace canteens. In consequence the men of the B.E.F. had to begin their campaigning on bare rations, supplemented with what they could buy from local shopkeepers. The complaints were loud and justified. General Sir John French, Commander-in-Chief in the field, appealed to the War Office for arrangements to right this wrong done to his troops. A basis existed on which these arrangements could be built; it was a two-legged basis: one leg was the Canteen and

[1] The writer of this article is indebted to that work for some of the material used.

Mess Co-operative Society, founded twenty years earlier by three public-spirited army officers who were dissatisfied with the business methods of canteen-contractors ; its profits were returned to the units dealing with it. The War Office now invited its general manager to collaborate in forming canteens for the B.E.F. The other leg of the chosen basis was the largest of the canteen-contracting firms, Messrs. Richard Dickeson and Company, whose chairman and managing director, Sir Alexander Prince, received from the War Office the same invitation. These two gentlemen got together ; the result of their combined efforts was the formation in 1915 of the Expeditionary Force Canteens as a separate branch of the Canteen and Mess Co-operative Society. This was financially assisted, firstly with £27,000 from the funds of the defunct South African Garrison Institutes, and secondly by loans guaranteed by the Treasury amounting in the end to £720,000 ; all of which was subsequently repaid with interest. The E.F.C. grew rapidly till it was soon serving the troops on nearly every front. Besides selling to the men everything from a cup of tea to a concertina, it had under its charge fleets of lorries and vans, officers' resthouses and clubs, mineral water factories (including the famous Valroy Spring at Etaples), breweries, butcheries, bakeries, printing works, and cinemas.

Meanwhile the vast expansion of the Army at home soon burst the capacity of the existing canteens ; and, as was to be expected, a host of parasitic traders descended on the camps to become rich at the soldiers' expense. The first remedies applied to this disease were the appointment by the War Office of a body of officers to act as canteen inspectors, and the establishment of a Board of Control of Regimental Institutes, whose duty was to license contractors, to control prices, and to secure from contractors a rebate for the benefit of the troops.

Fruitful as these remedies might have been in other circumstances, they failed under the stress of war. German U-boats were sinking large numbers of our food ships ; consequently canteen contractors had great difficulty in getting supplies. The situation could be saved only by the creation of a central buying, distributing and selling authority. This central authority could have been created either as a government department or as an organization such as the E.F.C., which was the property of the troops themselves. The latter principle was adopted and given effect to on 1st January, 1917, on which date came into existence the Army Canteen Committee, registered as a company not trading for profit. This committee immediately absorbed all the undertakings of private contractors and also the organization—plus the co-operative spirit—set up by the Canteen and Mess Co-operative Society. From this date onwards the Army at home got the best possible results because they in effect owned their canteens themselves.

The personnel of the Royal Navy, which also had long suffered from the principle of private trading, saw the benefits the men of their sister Service were receiving from co-operative trading under their own management. They asked to be allowed to participate: they were welcomed; the privately owned canteens of the Royal Navy were taken over by the Army Canteen Committee, which accordingly adjusted its name to the Navy and Army Canteen Board.

This transfer of the canteens of the Royal Navy and the Army caused little or no unemployment among the contractors and their servants, most of whom were taken over with their concerns, and some of whom still serve the sailors, soldiers, and airmen.

When the Royal Air Force was constituted in April 1917, it also put its catering business into the hands of this corporation, whose turnover at the end of the war exceeded forty millions a year.

Then peace came, and with it many useful lessons learned in those four eventful years were deliberately forgotten. But, although the wartime canteen organizations had to be broken up, the lessons they had taught for the benefit of the British fighting men were not forgotten; someone had the sense to see that not only were canteens needed in peace, but that war might come again, and that to send forces overseas once more with no pre-made canteen organization would be an act of criminal negligence. When the N.A.C.B. and the E.F.C. had been wound up, it was found that, by a complicated series of happenings, the E.F.C. was left without a legal status. The canteens' surplus profits, amounting to about £16,000,000, were therefore legally the property of the State, rather in the nature of treasure trove; but morally they were the property of some five millions of His Majesty's subjects who had served the Crown in the fighting forces. The situation was further complicated by seventy-five per cent. of these profits having already been distributed in grants, in rebates, and in kind to the units which had used the canteens. This Gordian knot was cut, as many English Gordian knots are cut, by an Act of Parliament. This Act (The War Canteens Disposal of Surplus Act, 1922) provided that the money should be distributed among Home, Dominion, and Colonial funds for the benefit of their fighting forces, and among ex-service men who benefited through the United Services Fund to the tune of £7,200,000.

Fortunately, however, the whole of the £16,000,000 was not distributed. The N.A.C.B.'s and E.F.C.'s assets, valued at about £350,000, were kept in hand for the founding of a new canteen organization to be known as the Navy, Army, and Air Force Institutes. For this purpose the Royal Naval Benevolent Trust also lent £150,000, which had accrued to it out of the above profits, and which has since been repaid with

interest It is noteworthy that the title of this new organization did not contain the word " canteen." The word " institute " was deliberately substituted to mark the end of a bad old world, which had passed away, and the beginning of a better new one. In the bad old world it had been to the benefit of profit-seeking canteen-contractors to help sailors and soldiers to feel so miserable that they had to look for a way out of their misery through the bottom of a glass: beer is an easy commodity to handle, and very profitable. " Canteen " had come to mean nothing more than a " boozer " ; and as the new canteens were to be in the nature of restaurants—almost clubs—a change of designation was desirable. In the present institutes, which are often the finest buildings in barracks, beer now accounts for less than 6 per cent. of the turnover.

Since the N.A.A.F.I. was given its charter in 1921 it has operated in every country where His Majesty's Services are stationed, except India, where vested interests are still too strong. Because it pools its large turnover, it is able to operate in small unprofitable stations and make up its resulting losses from the profits gained in big stations ; thus no man is deprived of its services. In peace time small unprofitable stations were bringing in an annual loss of £90,000 ; canteens in the smaller ships were losing £20,000 a year ; and £10,000 a year was lost at training camps and manœuvres.

This brings forward an important consideration—is it right and convenient for the N.A.A.F.I. to have a monopoly ; is there no benefit in healthy competition ? To begin with, the N.A.A.F.I. has no monopoly, except of site and of the supply of rations purchased against the cash allowances Though the competition of private contractors has been eliminated, the officers' and sergeants' messes, the families, and even the soldier may all deal where they please for their personal requirements ; in many of the larger stations also there is considerable competition from the philanthropic bodies.

The N.A.A.F.I. belongs to the personnel of the Services, who must therefore have a big say in its running. This representation is effected through the serving officers on the Board of Management, and through elected committees—of battalions, ships, brigades, stations, squadrons, commands—who carry complaints and suggestions to the Board of Management. In its eighteen years of life the N.A.A.F.I. has done more than create and stock institutes where men can eat, drink, rest, read, and play. Other services which it has taken upon itself are entertainment, the supply of all kinds of sports gear, wholesale and retail supply of goods to officers' and sergeants' messes, retail supplies to officers' and men's families, Christmas cards and other forms of printing, toys for children at Christmas,

and a lot of other amenities which go to justify Sir John Fortescue's statement that: "The establishment of the N.A.A.F.I. presents itself as, on the whole, the greatest benefit that has ever been conferred on the Army."

At home the N.A.A.F.I. also provides the greater part of the Army's rations. The Royal Army Service Corps is responsible for providing the basic ration—" Ration in Kind " as it is called, consisting of bread, flour, meat, tea, sugar, and salt. The " Commuted Ration " of bacon, butter, margarine, cheese, jam, marmalade, and syrup is bought by units direct from the N.A.A.F.I. at contract prices (no rebate). From the N.A.A.F.I. come also the materials bought with the " Messing Cash Allowance," namely milk, fruit, vegetables, eggs, fish, dried and tinned goods, condiments, alternative meats, etc. These are sold at the retail prices on which the Messing Cash Allowance is based, and rebate is paid on them. A similar system applies to messing goods purchased out of Cash Allowances in normal military stations overseas. Much the same system is used for the Royal Air Force. These systems do not, however, apply to troops with an expeditionary force, who get the whole of their rations from the R.A.S.C. " in kind."

In the Royal Navy the Accountant Officer responsible for messing is required to buy all provisions and groceries from the N.A.A.F.I.; he may please himself whether he buys his fresh foods either from the N.A.A.F.I. or from private traders.

The financial principle of the corporation is to return all profits to the men. This return is accomplished in two ways: firstly, in the provision of entertainments, institute amenities, and other concrete objects; secondly, in the form of cash payments into ships' and regimental funds, and in discounts to individual customers of the grocery shops.

By 1939 the N.A.A.F.I.'s turnover had expanded to some £10,000,000 per annum; while the last published accounts showed that £600,000 went back to the Services in hard cash alone. Before the outbreak of the present war the N.A.A.F.I. was fortunate enough to be given three useful rehearsals in fitting out expeditionary force institute services at short notice. These occasions were the expedition to Turkey in 1922, the expedition to Shanghai in 1927, and the troubles in Palestine during the last few years.

So we come round full circle to the start of this survey. When war was declared on September 3rd, 1939, a field institute service was able to be mobilized at the same time as the fighting forces and it accompanied the first troops overseas, a thing which has not happened before in the history of this country. Any small hitches which the B.E.F.

may have found in its institute services in the first weeks of the war were caused, not by faulty organization, but by priority on railways and ships having to be given to more essential services. For the service of expeditionary forces the N.A.A.F.I. had planned in peace-time an *ad hoc* branch to be known as the Expeditionary Force Institutes. This E.F.I. aims at giving the men in overseas theatres of war the same service as they were accustomed to at home, so far as the exigencies of war allow. Its key staff, including many old and experienced servants of the N.A.A.F.I., have been commissioned or enlisted into the R.A.S.C. to bring them under military discipline; but their pay still comes from the N.A.A.F.I. Its chief in France has the rank of Lieutenant-Colonel, and receives orders from the Quartermaster-General in the field as to where to place his institutes, depots, etc.; in all commercial matters he takes his orders from the N.A.A.F.I. headquarters at home. In the forward areas in the field units run their own institutes. They buy their stores in wholesale quantities at retail prices from Bulk Issue Stores set up by the E.F.I. In back areas the E.F.I. runs communal institutes wherever there is a large enough concentration of troops to demand them. Retail grocery shops are run for the supply of messes and those smaller units which, for one reason or another, are unable to use the institutes. These shops supply wines and spirits, tobaccos, cigarettes, groceries, and the majority of things officers and men are known to favour at home, at prices they are accustomed to and can afford.

The institutes are provided by the N.A.A.F.I. with wireless sets and indoor games on an agreed scale for each establishment, the cost being met out of revenue. Rest-houses for officers in transit, a soldiers' leave club in Paris, cinemas, variety shows, and shops selling sports goods are other services regarded as normal; these have already been developed as required.

No rebate is paid with the Expeditionary Force; but units in forward areas are allowed discount at the rate of 5 per cent., which is deducted at the times of payment of their accounts. In back areas it is not possible to calculate the proportions in which various units use the communal institutes; discount at the rate of 5 per cent. is therefore set aside to provide recreational facilities for all. This discount is calculated to bring in enough revenue to provide the following services:

(1) Free newspapers in the institutes (eight dailies and ten on Sundays) at a cost of £100,000 per annum per million men.

(2) Free sports goods at a cost of £300,000 per annum per million men.

(3) 1s. 3d. per man in the back areas, to supplement Christmas messing for the troops who do not draw a cash discount.

Distributions on these bases have already begun.

Entertainment was early foreseen to be very important for the well-being of the troops at home and with the expeditionary force. Therefore the small Entertainment Branch of the N.A.A.F.I., which in peace-time provides a number of small concert parties, was on the outbreak of war immediately expanded to meet the expected demand. Drury Lane Theatre was taken over as the headquarters of the N.A.A.F.I.'s Entertainment Branch ; and there, in co-operation with the Entertainments National Service Association, which provides the talent, a vast organization was set up under the N.A.A.F.I. Director of Entertainments to provide all the cinemas and flesh-and-blood shows which the troops might be in need of. This service also is financed by the N.A.A.F.I. and, at a rough guess, may cost as much as £350,000 per annum, a sum which will not be substantially lessened by the small charges for admission which have been approved by the Defence Ministries. Indeed, the expansion of entertainment—with all its ramifications of garrison theatres, mobile cinemas, and troupes of entertainers—appeared to be taking a course which, unless admission charges were made, might imperil the payment of the rebate on which the troops depend for their other recreational facilities.

At home and in normal peace stations abroad the N.A.A.F.I. has expanded to meet the demands of military and air forces employed on training and defence duties. Here, as also in the Royal Navy, the institute services continue much as they did in peace-time. Rebates on institute trading and on messing supplies purchased against the Cash Allowance in the Army and Royal Air Force is at the rate of 6 per cent.; and the N.A.A.F.I. provides the usual institute amenities of furnishing and equipment which the men are accustomed to in peace. Discount of 10 per cent. is allowed to messes and individuals who use the retail grocery shops.

It may be asked why a separate branch had to be formed to run the expeditionary force institutes ; but the answer is a simple one. The conduct of institutes in a theatre of war is not a fair commercial risk ; and this fact was recognised by the Defence Ministries, who agreed that a limit should be put to the risk which the N.A.A.F.I. should be expected to undertake. Separate accounts therefore are kept, so that claims can be made on the State if, among the uncertainties of war, it is found impossible to provide efficient service except at a loss.

Finally, from what we have seen of the last war and the arrangements made to meet this one, we may take it as extremely unlikely that the present institute services will cost the harassed taxpayer a single penny.

The whole of this question was considered by a committee sitting under the chairmanship of Mr. B. M. Draper, a Director of Finance at the War Office ; an interim report was issued in July, 1939 ; and it is upon this report that the broad lines of the corporation's present financial policy are based.

The general lines of this policy may be briefly summarized as follows :

(1) To aim at neither profit or loss, but at giving efficient service.

(2) In war to pay in full for all services (e.g., postage and telegraph, and transport and freight charges) received from Government Departments, other than those normally given free in peace.

(3) To set well-defined limits to the scales of recognised war benefits to the troops, i.e., discounts, rebates, entertainments, etc.

(4) To give service under conditions which are defined as clearly as possible in the Draper Report, and which could not be given more easily by a Service Department.

(5) To claim as recoverable from the State losses directly attributable to war in excess of an agreed sum.

Every precaution is taken to prevent any accumulation of profits, even such a sum as remained over at the end of the last war. That £16,000,000 may sound a lot of money ; but Lord Plender, the great accountant, reported it as representing only some 10 per cent. of the turnover, and in all the circumstances a very reasonable figure.

No worldly system of accounting could in the present circumstances hope, with things as they are, to show the perfect profit-and-loss account with a balance of zero ; but in spite of the many grave difficulties of a world-wide accounting system, faced with problems of wide decentralization, dilution of labour, postal delays, and the impossibility of stock-taking checks, it is hoped by careful estimation of anticipated turnover to limit the yearly balance between revenue and distribution to a reasonable figure.

In so vast an undertaking as that of the N.A.A.F.I. to-day, it is impossible to say exactly what figure may be regarded as reasonable. It must suffice to say that the corporation is confident that it has complete financial control. If revenue shows any signs of greatly

exceeding expenditure, there is always the obvious remedy of adjusting the basic rates of rebate and, in the case of the E.F.I., discounts.

The Navy, Army, and Air Force Institutes' Board of Management can justly claim that it is giving the Fighting Services the best canteen organization that conditions of to-day allow; but times will change; canteen service will be changed with them. Also the Board of Management, being in the closest touch with both the trade and the Fighting Services, is always in the best position to advise Government Departments on problems of rationing.

THE NAVY AND THE CRIMEAN WAR

By Lieutenant R. F. Colvile, R.N.

IT will be recalled that the question over which the Crimean War was fought was the independence of a Balkan state—Turkey—and that our main ally was France.

In order to send a fleet to the Baltic, a step which was decided upon in February, 1854, ships had to be hastily commissioned from reserve, or called in from isolated duties. In the interests of economy, training during the years after Waterloo had been mainly restricted to the Mediterranean Squadron. The result was that when the crisis did come the fleet was short both of officers and men. Many first-class officers had been permitted to return and were now eagerly welcomed back, but they were of course out of touch with such revolutionary mechanical developments as the introduction of steam and the explosive shell which had occurred during their absence. The officers who had succeeded them had, during the years of rigid economy and small squadrons, little training in the handling of ships or fleet work. Station keeping, for instance, was a lost art.

The ships' companies of the ships in regular commission were excellent, but there were no proper reserves. True, the Port guardships, on being commissioned from reserve, did at least have the nucleus of a crew in them, but other ships were less fortunate. The immediate steps taken to expand were the time honoured inducement of bounties. The "press," while it was still legally in existence, was not employed. Bounties were never very successful in tempting the real "prime" seaman to join up, for he always figured that by waiting a little longer the supply would fall still further short of the demand and the bounty would be increased. In this he was usually right. The Baltic Fleet, however, did manage to sail in March, the ships being manned for the most part by untrained recruits, obtained mainly from the ranks of the unemployed, the unemployable, and those who would otherwise have found themselves residing in prison for petty crime. These were stiffened by the inclusion of coastguardsmen and dockyard riggers, the equivalent of our present pensioners.

The fleet sailed sixteen days before war was officially declared; commanded by Sir Charles Napier, it was led out of Spithead by the Queen herself in the Royal Yacht. Landsmen such as Greville

believed it a magnificent sight, but the C.-in-C. complained bitterly to the First Sea Lord about the disgraceful handling of the ships in company.

The other shortage which seriously worried Sir Charles was that of Mates and Midshipmen. The Admiralty remedy in this case had at least the advantage of being simple ; they reduced the complement of these officers to each ship by one. They further authorised the Admiral to endeavour to persuade officers and men of the Royal Swedish Navy to serve in his fleet. Since Sweden, when not pro-Russian, was strictly neutral, this authorisation was of little use to Sir Charles. Nevertheless the best was made of a bad job, and the crews were exercised so assiduously that before the ice was fully broken in the Baltic the fleet had found its way unpiloted past the belt, and was concentrated in the Baltic before the Russian ships could emerge from their various bases.

The Crimean squadron was in a better state. What there was of a British fleet was in the Mediterranean. It was partly steam driven, partly sail ; sail, however, predominated. As the result of the crisis it was reinforced. The most important of the reinforcements was that of the second-in-command, Vice-Admiral Lyons, whose career is of some interest. He had, as a Midshipman, served in that squadron under Duckworth, which forced the Dardanelles in 1807. As a Commander he had commanded the "Blonde" (1829–30) and had during that time visited most of the Black Sea Ports. In 1835, having just been promoted to Captain, the Admiralty lent him to the Foreign Office, and Lyons spent the next fourteen years as British Minister to Greece, and as a result was very *au fait* with the Eastern question. In 1850 he was promoted, though still on loan to the Foreign Office, to Rear-Admiral of the Blue and a year later was transferred to Stockholm. In 1854, after the destruction of the Turkish squadron in the Bay of Sinope, and when war with Russia appeared inevitable, he was appointed as second-in-command in the Mediterranean and having hoisted his flag in the " Agamemnon," a 94-gun ship recently converted to steam, joined Admiral Dundas at Malta. His flagship raised the squadron to the status of a fleet, defined then as ten sail of the line. Admiral Lyons was a man of great energy and was supposed among his contemporaries to bear a strong physical resemblance to Lord Nelson. Fortunately also he co-operated exceedingly well with Lord Raglan, the Army C.-in-C., and Dundas, who was not very well and did not entirely agree with Lord Raglan, was very pleased to detail the charge of most of the combined operations to his second-in-command. Ultimately at the end of the year Dundas went home, leaving Lyons in command.

Lyons it was, therefore, who was responsible for the naval arrangements of the landing of the allied forces in the Crimea. This operation was successful, and the landing was unopposed.

In the Crimea there was from the beginning a combined fleet. The usual troubles of administration cropped up, intensified because the ultimate command of the French fleet lay with their Military Commander-in-Chief, Maréchal Arnaud. An allied code of signals had to be prepared which was a mixture of the two individual ones, and consisted not only of a code and decode but also of a manual as to how the fleet was to behave on certain occasions. The most interesting feature of this is the final paragraph which states that the part of the steam frigate is " to keep under shelter of their ships so as to be able to take them in tow if necessary, to man prizes and to carry the orders of the Admiral and take a favourable position."

In the early days of the war both fleets were exercised, but generally separately. The exercises consisted not only of sea drills but also of harbour ones, among which landing parties were not neglected. These, however, seem to have given little satisfaction to the Gunnery Officer of the " Rodney," who wrote, " To-day we landed five hundred men and several howitzers, and the usual ridiculous farce was gone through. The charging battalions performed eccentric somersaults over their fixed bayonets and met the serried phalanx of the foe when winded and in most glorious confusion. The skirmishers tore their clothes to bits and left their shoes in the muddy ditches ; one man fired into his front file and set his clothes on fire. . . . We finished at last by practising at a target and shooting an old Turk's cow two hundred yards from the line of fire." When it came to the point, later on, the sailors behaved magnificently ashore. The Naval Brigade won golden opinions outside Sevastopol ; the flying squadron which operated in the sea of Azov were constantly landing, raiding and returning to their ships and behaving in an extraordinarily dashing manner, containing by their ability to land unexpectedly far larger Russian forces.

At the beginning of the war until the allied armies arrived on the scene, the officers managed to get some shooting on the Turkish side of the Black Sea, and during the time that the fleet was at Sevastopol blockading the Russian fleet and seeing that the supply ships reached Balaclava in safety, individual ships and sometimes squadrons were sent off on expeditions along the Rumanian coast. Now and again they met with some slight opposition, or they ran into more than they bargained for. The " Firebrand " and " Vesuvius," on what was primarily a sightseeing expedition to the Danube, had some trouble with a Russian force at the stockade of Sulina when a boat force pro-

ceeding up the river was ambushed. This brush resulted in the death of the Commanding Officer of the "Firebrand," Captain Hyde Parker. The Chaplain of the "Firebrand" commented that Captain Hyde Parker was obviously a marked man "since his dress was very conspicuous, he being in blue while all the others were in white."

A major disaster was the loss of the "Tiger," which on one such cruise ran aground in a fog, and the capture or death of her entire crew. The ships' companies, however, remained on the whole fairly lighthearted about the war. The most serious menace, that of cholera, passed over the fleet comparatively lightly. For a fortnight at Varna the epidemic which was raging among the allied armies ashore touched the fleet, but at the end of the fortnight it stopped almost as suddenly as it had come. The armies, however, continually suffered from it.

Otherwise the chief danger seems to have been the Black Sea hurricanes, one of which, on 14th November 1854, managed to sink the greater part of the supply ships, including the "Prince," the pride of our transport fleet. Out of the seven transports sunk only thirty men out of their combined ships' companies lived to tell the tale. More unfortunate still, these transports were fully laden and their sinking contributed greatly to the misery of the winter for the Army ashore. The Navy, however, never suffered to the same extent from the supply problem. In the Army it was partly the result of bad administration, partly due to shameless profiteering by the contractors, and partly due to misfortune. As a rule supplies were landed in good order at the port at Balaclava, but great difficulty was experienced in transporting them from the wharfs to the Army on the plateau above. The transport animals who had come to the Crimea with the Army were soon worn out and dead; native animals impressed from the local inhabitants lasted very little longer.

The difficulties of transport were, however, enhanced by the continuation of the siege of Sevastopol. Originally it had never been intended to besiege it throughout the winter. The commanders had expected that it would be captured by the autumn, but once landed, they found it impossible to withdraw from their situation without incurring heavy loss from the relieving army which threatened their flank and forced them to fight the battles of Alma, Balaclava and Inkerman. The result of this was that not until it was much too late had anyone thought about building roads, which might have been done in the relative dryness of the early autumn. With the coming of the rain, and later snow, the tracks became impassable mud bogs. This in turn resulted in a glut of supplies on the wharves, and the anchoring of laden supply ships off Balaclava Bay for months at a time, and their destruction

by the winter gales. There were other scandals as well, and these were less excusable. The shipping of a cargo of right-footed boots and none left-footed is perhaps the most notorious.

The most important technical development of the war was a French one, for which the Emperor Napoleon III is usually given the credit. The Emperor, who followed the war with great interest, observed the effectiveness of the Russian shell fire on the " wooden walls " and suggested that floating batteries should be built, on the outside of which iron plates should be bolted. Accordingly he had experiments carried out, and some of the batteries which resulted from them were used towards the end of the war. In the destruction of Fort Kimburn, the action which followed the fall of Sevastopol, they were used with considerable success, and Admiral Lyons writes : " The French floating batteries have gained golden opinions here by the effect produced by their fire on the ramparts as well as by the little or no effect produced on them by the fire of the fort. . . ." These batteries were of 1,400 tons, 164 ft. by 42 ft. by 9 in. draught, possessed low H.P. screw propulsion, had 4 in. iron sheets clamped on to their outside and were manned by a crew of 280 officers and men. They also possessed rudders on each quarter and an iron conning tower " for the safety of the Captain." At the end of the war we had similar vessels under construction (without the conning tower, of course), but the war came to an end before they were ever used. In fairness to Admiral Sir Charles Napier it should be remembered that he had actually suggested a similar vessel to the Admiralty fourteen years previously. It had been turned down.

War experience besides introducing the ironclad also gave a great fillip to the steam propulsion enthusiasts, steam being proved invaluable at Sevastopol for towing damaged ships out of range of the fire of the forts. Explosive shells were found to be a far more effective weapon than the round shot to which we still tended to cling, and the new mechanical spirit among naval officers, centred chiefly among the enthusiasts of Whale Island, was considered to have been justified.

Public opinion, which had expected glorious fleet actions, was of course rather disappointed. The Navy's work was on the whole exceedingly unspectacular. It is hard to display the Nelson touch when there is no one to display it against (even Nelson must have found that at times during his wearisome blockading of a fleet which declined to come out), and land fortifications are always difficult things to tackle from the sea. For all that, there were a number of brilliant minor actions and some almost fantastic incidents of fighting zeal. There was one frigate Captain who whilst bombarding Odessa, rather Nelsonically failed to observe his recall. The C.-in-C. therefore ordered him to repair on board

the flagship forthwith. About came the frigate, out came the Captain's gig, and almost before the piping of the side had been completed, she was returning to the bombardment under the command of her First Lieutenant. One doubts if even Nelson would have approved such blindness.

RULES FOR MECHANIZED MOVEMENT

By Major N. H. Edes, *p.s.c.*, Royal Corps of Signals

In planning the move of a mechanical transport column we have to consider some or all of the following : the number of vehicles, the speed and density at which the vehicles will travel, the length of the column and the time it will take to pass a given point. The relationships between these quantities, though not complex, may well elude the staff or regimental officer who has to work out a movement table hurriedly under conditions of stress. To ease the task, various ready reckoners have been devised, in the form either of graphs or tables. Such devices, though useful, have the drawbacks firstly that they can deal only with certain standard densities, speeds, etc., and secondly that they have to be constantly at hand and accessible among the many papers that an officer nowadays has to carry in the field. Yet by memorising one simple formula—or at most two—an officer who is not shy of simple arithmetic can solve any problems in this subject quickly and accurately. He will not be tied down to " standard " cases and, moreover, it is easier to carry a formula in one's head than a pamphlet in one's pocket.

We will put the matter in its most mathematical aspect first so as to get the worst over at the beginning.

Let the number of vehicles be n.

Let the average speed be v miles in the hour (m.i.h.).[1]

Let the density be d vehicles to the mile (v.t.m.).

Let the time the column takes to pass a given point be t hours.[1]

Let the length of the column be l miles.

The following three relations hold good (their proof will be left to the reader) :—

$$(1)\quad dtv = n$$
$$(2)\quad dl = n$$
$$(3)\quad l = tv$$

It will be seen that (1) does not contain l. It is therefore the formula to use when we do not know, and do not want to know, the length of the column ; this often applies as we are frequently more concerned with

[1]We express the time in hours so as to keep the formulæ simple. It can always be brought to minutes by multiplying by 60 (an easy figure to deal with).

the time a column takes to pass than with the length of road it occupies. (2) and (3) both contain l. The three equations are not—in mathematical language—" independent " ; that is to say that, granted any two of them, the third follows from those two. It is suggested that (1) should be memorised as being, perhaps, the one of greatest use. A mental note that the tv in it can be replaced, if one wishes, by l gives both (2) and (3).

Example 1.—Let us, then, consider a few examples of the use of (1). If we know any three of d, t, v, and n we can clearly find the fourth. Suppose, for instance, that a column of eighty vehicles is to move at 15 m.i.h. and 20 v.t.m., and we want to find how long it takes to pass a point. We write (1) in the form $t = \frac{n}{dv}$

Hence $t = \frac{80}{20 \times 15} = \frac{4}{15}$ hours.

or 16 minutes.

Example 2.—Again, suppose that a column of ninety vehicles is to move at 10 v.t.m., and we want to know at what speed it must move in order to clear a point in 30 minutes ($= \frac{1}{2}$ hour). We write (1) in the form $v = \frac{n}{dt}$

Hence $v = \frac{90 \times 2}{10} = 18$ m.i.h.

Similarly, if d, t and v are known we can find n, for it equals dtv ; or if t, v and n are known we can find d, for it equals $\frac{n}{tv}$.

Example 3.—To find the time intervals there must be between vehicles running at a given speed in order that they may run at a given density, we write $t = \frac{n}{dv}$ and then put $n=1$, since we want to find the time that a " column of 1 vehicle " takes to pass. Thus the time interval between vehicles running at 15 m.i.h. and 20 v.t.m. is $\frac{1}{20 \times 15}$ hours or $\frac{60 \times 60}{20 \times 15} = 12$ seconds.

So much for (1). As to (2) and (3) little need be said except that one or other must be used when we are given, or wish to know, the length of the column. Clearly we use (2) when we are not concerned with the time of passing or the speed, and (3) when we are not concerned with the density or number of vehicles. We will take only two examples :—

Example 4.—What is the length of a column of 100 vehicles moving at 5 v.t.m. ?

We use (2) and write it in the form $l = \frac{n}{d}$

Hence $l = \frac{100}{5} = 20$ miles.

Example 5.—How long will a column 20 miles long, moving at 10 m.i.h., take to pass a given point ?

We use (3) in the form $t = \frac{l}{v}$

Hence $t = \frac{20}{10} = 2$ hours.

We feel that most readers could have solved the last two examples without the aid of this article. To them we offer our apologies, but we wish to end by dispelling any fears that the mathematical appearance of the problem may have engendered.

Our parting advice is : (*a*) Memorise $dtv = n$. (*b*) Note that, when it suits one's purpose, one can use l as equal and equivalent to tv.

With these simple rules the formula (or if you will, formulæ) will be found versatile enough to solve all practical problems in two lines of short arithmetic, or even indeed by mental arithmetic. Finally, no formula can be expected to tell an officer the number of vehicles in his formation or unit ; for this he must again depend on his memory or perhaps, alas, on a ready reckoner !

THE WORK OF THE ROYAL OBSERVATORY

By Dr. H. Spencer Jones, M.A., Sc.D., F.R.S., Astronomer Royal.

On Wednesday, 22nd March, 1939.

Vice-Admiral J. A. Edgell, C.B., O.B.E., in the Chair.

The Chairman: It is part of the duty of the Chairman at a lecture to introduce the Lecturer, but I feel that the Astronomer Royal really requires no introduction whatever; he is, as it were, an institution.

LECTURE [1]

In dealing with the work of the Royal Observatory, I will first give a brief account of its early history, in order to make clear for what purposes it was founded and to emphasise what I may call its traditional work; then I will deal with the period of modern expansion and some of the principal items of work with which we are concerned at the present time.

EARLY YEARS

The founding of the Royal Observatory was really due to the difficulty in the XVIIth century of determining longitude at sea. There was, of course, no difficulty as regards latitude; but determining longitude was a very different and a very much more complex problem. There were many solutions put forward from time to time; in particular, in the time of Charles II, a proposal was made by a Frenchman called Le Sieur de St. Pierre, for finding longitude at sea by means of the distances of the moon from the fixed stars. This proposal was not original on Le Sieur's part, and was a rather garbled version of a proposal put forward some time previously; but he happened to have a friend at Court—a French lady with some considerable influence, and through her the proposal was brought to the King's notice. It was referred to a committee which included a young Cambridge graduate—John Flamsteed who had already made his mark in astronomy. In a report laid before Charles II, Flamsteed pointed out that the method could not be used owing to the deficiency of the existing tables of the moon's motion and to the uncertainty about the exact positions of the fixed stars. The King, who was rather startled by this assertion, said with some warmth, "he must have them anew observed, examined and corrected, for the use of his seamen." Flamsteed emphasised the necessity for accurate observations for this purpose. The King replied with some earnestness "he must have

[1] The Lecture was illustrated by a number of lantern slides.

it done." On being asked whom he would find to do it, with his usual readiness, Charles at once replied: "Well, the person who has pointed it out," and Flamsteed was forthwith, at the age of twenty-nine, named Royal Astronomer, with a salary of £100 per year, though with promises of the necessary instruments and assistance. A Warrant was issued over the King's signature for the building of an observatory. This document ran as follows:—

WARRANT FOR BUILDING THE OBSERVATORY.

CHARLES REX.

WHEREAS, in order to the finding out of the longitude of places for perfecting navigation and astronomy, we have resolved to build a small observatory within our park at Greenwich, upon the highest ground, at or near the place where the Castle stood, with lodging-rooms for our astronomical observator and assistant, Our will and pleasure is, that according to such plot and design as shall be given you by our trusty and well-beloved Sir Christopher Wren, Knight, our surveyor-general of the place and scite of the said observatory, you cause the same to be fenced in, built and finished with all convenient speed, by such artificers and workmen as you shall appoint thereto, and that you give order unto our Treasurer of the Ordnance for the paying of such materials and workmen as shall be used and employed therein, out of such monies as shall come to your hands for old and decayed powder, which hath or shall be sold by our order of the 1st of January last, provided that the whole sum, so to be expended or paid, shall not exceed five hundred pounds; and our pleasure is, that all our officers and servants belonging to our said park be assisting to those that you shall appoint, for the doing thereof, and for so doing, this shall be to you, and to all others whom it may concern, a sufficient warrant.

Given at our Court at Whitehall, the 22nd day of June, 1675, in the 27th year of our reign.

By His Majesty's Command,

J. WILLIAMSON.

Then there was the warrant for the payment of John Flamsteed's salary:—

WARRANT FOR THE PAYMENT OF MR. FLAMSTEED'S SALARY.

CHARLES REX.

WHEREAS, we have appointed our trusty and well-beloved John Flamsteed, Master of Arts, our astronomical observator, forthwith to apply himself with the most exact care and diligence to the

rectifying the tables of the motions of the heavens, and the places of the fixed stars, so as to find out the so-much-desired longitude of places for the perfecting the art of navigation, Our will and pleasure is, and we do hereby require and authorize you, for the support and maintenance of the said John Flamsteed, of whose abilities in astronomy we have very good testimony, and are well satisfied, that from time to time you pay, or cause to be paid, unto him, the said John Flamsteed, or his assigns, the yearly salary or allowance of one hundred pounds per annum ; the same to be charged and borne upon the quarter-books of the Office of the Ordnance, and paid to him quarterly, by even and equal portions, by the Treasurer of our said Office, the first quarter to begin and be accompted from the Feast of St. Michael the Archangel last past, and so to continue during our pleasure. And for so doing this shall be as well unto you, as to the Auditors of the Exchequer, for allowing the same, and all other our officers and ministers whom it may concern, a full and sufficient warrant.

Given at our Court at Whitehall, the 4th day of March, 1674-5.

By His Majesty's Command,

J. WILLIAMSON

The building of the Observatory was soon completed, but when he was settled there Flamsteed began to complain that instruments were not supplied to him nor was the promised assistance granted to him. In his letters and diaries he continually refers to these grounds for complaint and to the expense he incurred for carrying on his observations. The only instruments he had were some given to him by Sir Jonas Moore and others constructed by himself and his assistant, Sharp, who was equally skilled as a mechanic and calculator. Flamsteed had no assistance provided him ; any assistance he needed he had to defray out of his official salary of £100 per year ; yet with the most praiseworthy spirit and zeal he got a good deal done in the way of observation. At first he had only a sextant by which the places of the stars could not be referred to any fixed point. Most of the instruments were portable and the main room of the Observatory, octagonal in shape, was provided with long windows into which they could be moved and pointed to any part of the sky.

It was believed that Flamsteed wished to build a deep well from which it would be possible to observe the bright stars in the day time ; but no trace has ever been found of it, and it is still uncertain whether or not the well was ever sunk.

It was not until 1684 that an instrument, called the mural arc, fixed in the plane of the meridian was erected. The observations with the sextant up to that time had only determined the relative positions of the stars. Flamsteed had no means of determining their absolute positions. Nevertheless, he began to be beset by requests that he should print his observations. This caused him much annoyance. One of the most importunate of those who were pressing for this publication was Sir Isaac Newton, who was in the process of developing his ideas about gravitation. Flamsteed and Newton took inherently different views; the former felt—perhaps not unnaturally—that although he had been named Astronomer Royal, he had been left without support: his instruments were his own—purchased by him, made by his own assistant, or given to him; his nominal salary was insufficient to cover his actual expenses, and in any case he found difficulty in getting it. In order to be able to live, he had to take the living of Burstow; he was a Clerk in Holy Orders. From 1676 to 1709 he also took 140 private pupils, many of whom were sons of wealthy families, through whom he acquired a considerable amount of influence. It was not unnatural, therefore, that he should regard his observations as his own property. He wanted to bring out a single great work which would be a monument to his own industry and skill and would raise the name of England in the astronomical and scientific world. But Newton was impatient and could not wait for the refinement and completion of such a work; the result was a quarrel that gradually became worse and worse. The upshot was the appointment of a Committee of the Royal Society as a Board of Visitors, which still functions, to visit and inspect the Observatory and maintain a control over the Astronomer Royal. Such a board can be and should be very helpful; but Flamsteed, who was a man of rather difficult temperament, felt it to be an intolerable wrong. Finally, he was compelled to deposit his volumes of observations with the Royal Society, which he did, under seal, and with the pledge that they would not be opened without his permission. Nevertheless, in spite of that pledge, the observations were published without Flamsteed's assent, under the name *Historia Coelestis*, in the year 1712. There were many errors in the publication, and it was not surprising in the circumstances that this unauthorised publication caused him a very great deal of worry. So much so that on the death of Queen Anne when there was a change of Ministry and people more friendly to Flamsteed came into power, he was able to secure three hundred out of the four hundred copies that had been printed, and he publicly burnt them "as a sacrifice to heavenly truth," except copies of the first volume, which contained his sextant observations, and was free from errors. Having burnt this *Historia Coelestis*, he started to work it all out *de novo* at his own expense. The first volume, and much of the

second volume, had been printed when, in the year 1719, he died. The rest was completed in the next ten years by his devoted assistant, Crosthwaite. That great work still stands as a monument to what Flamsteed achieved in his forty-four years at the Royal Observatory, in the face of very great difficulties and with not very much support.

He was succeeded in 1720 by Edmund Halley, a man ten years his junior, and with whom Flamsteed had had many controversies.

Halley is best known, perhaps, by the comet named after him. This was called after him, because when investigating the orbit of a bright comet that appeared in the year 1682, he found that it showed considerable similarities to the orbit of the bright comet of 1607, and that this in turn showed similarities to the orbit of one that appeared in 1531. At that time it was believed that comets were celestial visitors that came to us from immeasurably great distance, passed round the sun, and went off again, never to return ; in fact, that their orbits were not closed and they were parabolic or even hyperbolic. Halley came to the conclusion that these three comets were different returns of one and the same object, and that comets, therefore, did not move in parabolic but in elliptic orbits—just as the planets do, but these orbits were so elongated that they extended to a great distance beyond the sun. He predicted that the comet of 1682 would return in 1759. As he would not be alive then, he said, " if it should return according to our prediction, about the year 1758, impartial posterity will not refuse to acknowledge that this was first discovered by an Englishman."

As the time that Halley had predicted for the return drew near there was tremendous excitement, as to whether the prediction would be fulfilled. The comet was first detected on Christmas Day in 1758, and it passed its closest to the sun on 12th March, 1759—very near the time Halley had estimated. Thus his prediction was triumphantly verified and it was proved that comets, like planets, move under the law of gravitation. Chinese records mention the appearance of a comet as early as the year 240 B.C., and it is probable that this was what became known as Halley's comet. It is interesting to note that its reappearances have more or less synchronised with many notable events in history ; it appeared, for instance, in 1066 at the time of the Norman Conquest, and is shown on the Bayeux tapestry. It last appeared in 1910 ; it was a disappointing object in this country as it was too far south to be well observed in northern latitudes ; in the southern hemisphere it was a magnificent sight. Halley's work is commemorated in these lines :—

" Of all the objects in the sky
There's none like Comet Halley ;
You see it with the naked eye
And periodic-ally.
The first to see it was not he,
But still we call it Halley ;
The notion that it would return
Was his origin-ally."

Before his appointment as Astronomer Royal, Halley had been to the southern hemisphere, visited St. Helena, and made a catalogue of the southern stars. He was interested in the problem of the variation of the compass.[1] Knowledge of that variation is, of course, essential to the mariner. Halley was given a Captain's commission by William III, and placed in command of the " Paramour Pink " to study the variation of the compass. He made two voyages in this vessel and produced the first magnetic chart.

Important though work such as this was, Halley's greatest claim to fame was due partly to his being Secretary of the Royal Society, and partly to his interest in the motion of the heavenly bodies. His work on the comet named after him, and other of his work, caused him to think about the problem of the path a body took if it was moving round the sun ; what force caused it to move, as it was known to do, in an orbit elliptical in shape, and according to definite laws of motion discovered by Kepler ? He visited Sir Isaac Newton at Cambridge in order to discuss the matter with him. He found out, very much to his surprise, that Newton had worked out these things, and that he knew the answers to the questions Halley put to him, and was able to say straight away why a planet or a comet moved in an elliptical path and why Kepler's laws of motion were obeyed. Newton was a very diffident and retiring man, and the world knew nothing of these things. It is doubtful whether the world would ever have known of Newton's investigations had it not been for Halley's persuasion and his continual inducements to Sir Isaac to write out a logical account of them and get it published.

Largely due to Halley's encouragement, Newton wrote his immortal work the *Principia* ; then came the question of publication. As Secretary of the Royal Society, Halley tried to get the Royal Society to publish it. They had not the funds, and eventually Halley paid for publication out of his own pocket.

[1] The angle between the direction in which the magnetic compass needle points and the true North is different at different points of the earth's surface.

When Halley was appointed to succeed Flamsteed at Greenwich, Flamsteed's instruments had been removed by his widow, who claimed them as her own property, and succeeded in maintaining her claim against the objections of the Admiralty; so the Observatory practically had to begin again. Halley obtained a grant for instruments, and equipped the Observatory with a transit instrument and a mural quadrant. The chief work he did as Astronomer Royal in the matter of observation was to observe the moon through an entire saros—the period of eighteen years and ten days, after which the earth, the moon and the sun come practically into the same relative positions. All phenomena, like eclipses, that depend on those three relative positions, are repeated after that interval. The object of these observations was to make an improved set of tables of the motions of the moon, so necessary for navigation.

Halley died in 1742, at the age of eighty-six. In summing up his work, I think we may say that he was a greater astronomer than Flamsteed, but as Astronomer Royal he did less. He undervalued those habits of minute attention that are indispensable to the attainment of a high degree of excellence in astronomical observation. He was not sufficiently careful of the adjustment of his instruments and the regulating of his clock, to be able to keep his observations free from error.

Halley was succeeded in 1742 by the Reverend James Bradley, who at that time was the Savilian Professor of Astronomy at the University of Oxford. He had formerly assisted his uncle, Mr. Pound, who had an observatory at Wanstead, where he continued to observe, whilst at Oxford, after his uncle's death. He had already made one important discovery, the discovery of the phenomenon known as aberration. He was observing the bright star, Gamma Draconis, that passed nearly through the zenith in London and was endeavouring to find the distance of the star, working on the principle that as the earth moved round the sun, a nearer star would be slightly displaced relatively to a more distant star. It is a method used nowadays for finding star distances. Bradley found that there were such displacements, which were evidently caused by the earth's motion; but whereas Flamsteed had attributed them to the finite distance of the star, Bradley saw that that was not the true explanation, because though the path in the sky was a small ellipse it was displaced through a right angle from the expected direction. He was puzzled, but the explanation came to him in a flash one day when he was sailing on the Thames. He noticed a vane on top of the mast, and every time the boat changed its direction, the direction in which the vane was pointing also changed. He commented on this fact to the boatman, who explained that it was merely the result of the motion of the boat. The explanation of the observations which had worried Bradley

was now clear to him ; it was that the light from the stars does not travel with an infinitely great velocity, but with a finite velocity, so that the direction in which the star appeared was due to a combination of the motion of the earth with the finite velocity of the light from the star. In a similar way, if rain is falling vertically, and you are travelling in a train, the rain seems to meet you. The star will appear displaced towards the direction to which the earth is moving ; when the earth moves in the opposite direction, the displacement of the star is also in the opposite direction.

When Bradley came to Greenwich, he found the Observatory in a disheartening condition. Halley was an old man and his health had been bad for some five years before he died. During that time he had no assistance, and the instruments had been very much neglected, and were in a poor condition. Bradley applied to the Royal Society, and in 1748 he obtained a grant of £1,000 to purchase better instruments.

He continued to observe the star Gamma Draconis during a period of nineteen years, in spite of the fact that he was fifty years old when appointed to Greenwich. As a result of these observations he discovered another phenomenon called " nutation," a wobbling of the earth's axis, due to the fact that the earth is not spherical, but slightly flattened like an orange, so that it has two equatorial bulges ; the attraction of the moon acting on these bulges tilts the axis of the earth slightly, and as the moon moves round its orbit the slight wobbling of the earth's axis results from the varying attraction of the moon.

Bradley was a great observer. He was particularly earnest in examining the errors of his instruments, and keeping them in the best of condition, so that he raised the practical work of the Observatory to a very high standard. Amongst other things, he determined the laws of refraction and introduced for the first time corrections for the temperature of the air, and for the height of the barometer. He made a catalogue of stars, published in 1755, which is the first of the old catalogues that is still good enough to be incorporated with modern observations. He was the first Astronomer Royal to have an assistant—his nephew John Bradley, who received the magnificent salary of 10s. a week. In 1752 Bradley was given a Crown pension of £250 a year in addition to his official salary, which still remained at the £100 per annum fixed in the time of Flamsteed. He was offered the living of Greenwich, but refused it, because he said it was not possible to do that work and his official work efficiently. He died in 1752, having brought great fame to the name of Greenwich, and was succeeded by the Reverend Nathaniel Bliss.

Bliss was Astronomer Royal for two years only before he died, so that he has left no mark at all on the Observatory. We know little of him ; he

is the only Astronomer Royal of whom we do not possess a portrait. The only picture of him that we have is taken from an old pewter beer mug: an inscription on it runs: "This sure is Bliss, if Bliss on earth there be." I think that tells us what sort of man Bliss was. He was evidently a very good companion.

In 1764, Bliss was succeeded by Neville Maskelyne, a man who had already acquired some fame by observing the transit of Venus in 1761, in St. Helena. He made his chief aim as Astronomer Royal the improvement of the practical basis of navigation. The Observatory was originally founded with a view to making possible the determination of longitude by observing the distances of bright stars from the moon. There had been a great improvement in the meantime in the computation of tables of the moon's motion and in the construction of more accurate star catalogues giving the positions of the bright stars. That made this method for determining longitude—the method of lunars—a practical one. The invention of the sextant had made observations at sea more accurate. In 1763, the year before he was appointed Astronomer Royal, Maskelyne had published *The British Mariners' Guide*, a handbook for the determination of longitude at sea by the method of lunars. Hitherto there had been no means of getting the longitude with anything like the accuracy desired; so much so that, in order to reach, say, an island, ships would work into the right latitude but, having got a considerable way either east or west of their point of arrival, would then sail west or east as the case might be, until land was sighted.

The problem became so acute that the British Government offered a prize of £20,000 for a satisfactory method of determining longitude within specified degrees of accuracy. That prize was ultimately won by John Harrison, a carpenter by profession, who set about making a timepiece that would keep accurate time at sea. Timepieces of the ordinary pendulum type were impossible for use at sea because the rolling upset the pendulum. Harrison designed a large machine in the first place, and gradually improved it. One of his timekeepers was tested by Maskelyne in 1763, on a voyage to Barbados, Maskelyne having been appointed Chaplain to H.M.S. "Louisa." We have his diary giving some account of his trial of the timepiece. Maskelyne was perhaps not altogether fair to Harrison, being prejudiced by his preference for his own method of lunars. Harrison's fourth timepiece, with which he ultimately won the award, was a pocket watch, the forerunner of the modern chronometer.

In 1766 Maskelyne published the first number of *The Nautical Almanac* (for the year 1767): a publication intended for the use of seamen and for facilitating the use of lunars for determining longitude at sea. He carried on that publication himself, with some assistance, for forty-four

years and was responsible for it from the first number until his death in 1811. In that time it acquired a very well-deserved reputation for high accuracy. On his death his successors took little interest in it, after some vicissitudes, it was carried on by a naval officer ; but it was not long before it became a by-word for errors and inaccuracies.

Maskelyne arranged for the regular and systematic publication of his observations, and during the time he was Astronomer Royal he published four very large volumes containing some 90,000 observations—a magnificent achievement, remembering that he never had more than one regular assistant. The only other work of his I need mention is that devoted to weighing the earth. He went up to Scotland, with some assistants, to a mountain called Schiehallien, and made observations with a pendulum, comparing the attraction of the mountain mass with the attraction of the earth as a whole, and from that he made an estimate of what the earth itself weighed. I think it was the first determination of any real accuracy of the weight of the earth.

THE PERIOD OF EXPANSION

Maskelyne was succeeded in 1811 by John Pond, who was forty-four years old at the time of his appointment. Pond was a born observer. He was probably the first to recognise the importance of greatly increasing the number of observations, and his observations were characterised by a very high degree of accuracy. Amongst other things he did was to introduce the mercury horizon, which not only enabled information about the flexure of the telescope to be derived by observing stars by reflection in the mercury, but also enabled the position in which the telescope is exactly vertical to be readily determined.

After his appointment the salary of the Astronomer Royal was increased to £600 a year, and the staff was increased to six.

Pond made an extraordinary mistake : he had an entirely wrong idea about the type of people that should be engaged for carrying on observations and for reducing them and making the necessary computations. He said he wanted " indefatigable, hard working, and above all obedient drudges, for so he must call them, although they were drudges of a superior order ; men who would be content to pass half their days in using their hands and eyes in the mechanical process of observation, and the remainder in the dull process of calculation." To take that attitude—to regard observation as a mere mechanical process, and calculation and computation as a dull process—was fatal, and not likely to raise the prestige of the Royal Observatory, particularly as Pond became very much an absentee Astronomer Royal, merely making occasional visits to the Observatory, and allowing his drudges to carry on much as they

wished in the interval. The Board of Visitors proved its value and efficiency by addressing remonstrances to Pond, which in 1835 had reached such a point that he was compelled to resign. In fact, if he had not resigned, he would have been dismissed.

His administration was the least satisfactory of all the Observatory has known, although Pond himself had some excellent qualities. He understood the requirements of astronomical observations as well, if not better than his predecessors, and some of the catalogues produced while he was Astronomer Royal have a very high degree of accuracy.

He was succeeded in 1835 by George Biddell Airy, a Senior Wrangler of Cambridge and a Smith's Prizeman. When he was appointed, the First Lord of the Admiralty told him that the Royal Observatory had fallen into such disrepute that the whole establishment should be cleared out. The choice of Airy was very excellent; it could not have been bettered, because he seemed to have acquired or inherited all the great qualities of his predecessors. He had Flamsteed's methodical habits, pushed to an unnecessary degree (so much so that it was said of him that if he wiped his pen on a piece of blotting paper, he would initial and date it); Halley's interest in the lunar theory; Bradley's devotion to the making of star catalogues; Maskelyne's promptitude in publishing and his keen interest in practical navigation; and Pond's refinement of observation. During his long tenure of the office of Astronomer Royal—he held office for forty-six years, retiring in 1881 at the age of eighty-one—the Observatory was expanded both as regards instrumental equipment and staff.

THE OBSERVATORY OF TO-DAY

It becomes more appropriate now to terminate this historical review and describe some of the different branches of work undertaken at the present time, many of which were inaugurated in Airy's time.

There is first of all the work of continuing the observations of the sun, the moon, the planets and the fixed stars. That is a branch of astronomy that has to go on, and will never be ended; it is fundamental. For many purposes in astronomy the positions of stars distributed over the sky have to be known with considerable accuracy. Airy's transit instrument designed by himself and installed in 1851, has continued in regular use until the present time, when it is on the point of being pensioned off. It is perhaps the most famous astronomical instrument in the whole world, and more observations have been made with it than with any other. In this type of work it is extremely difficult to eliminate all the various errors that come in from instrumental causes. For the purposes of comparing the position of the stars from one year to another and for

determining their movements accurately, observations with the same instrument are of the highest importance, so much so that in the recent discussion of star positions and motions based on observations made at observatories all over the world, the motions of the stars in the Northern Hemisphere were based entirely on this instrument at Greenwich and another instrument in Russia. It was the considered verdict of Simon Newcomb, the great American Astronomer, that "if this branch of astronomy were entirely lost, it could be reconstructed from the Greenwich observations alone."

With the transit telescope it has been possible to determine with great accuracy the positions of a number of the brighter stars spread over the sky. These are used as "clock stars"; that is to say, it is known at what instant any one of them should cross the meridian. The process of determining time is to observe the instant by the clock at which a clock star crosses the meridian. Knowing at what time it should cross the meridian, the error of the clock can be inferred and so the time is determined. There are naturally many highly technical details involved, but we need not go into them now.

In 1883 a conference at which most countries were represented met in Washington to see whether agreement could not be reached about the meridian from which longitudes were to be measured. The only zero as to which there could be obtained fairly complete agreement was the meridian through the centre of the famous telescope of the Royal Observatory at Greenwich. The Prime Meridian Conference decided in 1884 that all longitudes should be measured from this meridian. That resolution was passed with only one country dissentient—San Domingo!

One of the troubles of the old instrument arises from the impure atmosphere of Greenwich, necessitating the frequent cleaning of the silver circle, and consequently the graduations have nearly disappeared. In the new instrument, which is to replace the old one, the graduations are etched on glass, the largest glass circles that have been made. It incorporates a large number of improvements based on long experience with the old instrument and refinements in the technique of observation.

Determining time is merely finding the error of the clock, but for the purpose of the distribution of time it is necessary to use the observed rate of the clock for predicting ahead. In long spells of bad weather, it may be necessary to rely on the clock for as long as two weeks. For an accurate time service, clocks of high precision are therefore essential. There have been considerable developments in recent years towards more and more precise clocks. The latest astronomical clock does not look much like the popular idea of a clock. It consists essentially of a pendulum swinging in an air-tight copper cylinder, which is housed in a

room kept at constant pressure. The pendulum swings entirely freely, except that once each half-minute it receives a slight impulse. This pendulum controls a " slave clock," which is compelled to swing in exact synchronisation with it and upon which is placed all the work of driving a train of wheels, recording the time on a dial and sending out signals. The rate of clocks of this type can be relied upon to about one-hundredth of a second a day.

One of the interesting problems to-day is the study of the bad time keeping of the earth. The unit of time is not constant—that has been revealed from astronomical observations—but the irregularities in time keeping of the earth are rather less than those of the best pendulum clocks. We cannot therefore use pendulum clocks to check the earth ; we have to check our clocks against the earth. There is a possibility that with a new clock that has been recently developed we may hope to check the time-keeping of the earth itself. This new clock, one of which is just being installed at Greenwich, consists essentially of a quartz crystal maintained in vibration by electrical means. The vibrations—about 100,000 a second—are counted by special methods. The rate of such clocks remains constant to about one-thousandth of a second a day, and should therefore detect any sudden change in the length of the day. In the past, changes of between three and four-thousandths of a second in the length of the day have occurred rather suddenly. It is not known for certain, however, whether such changes have taken place instantaneously or have been spread over a year or two.

Having determined time, we make it available to the public in several different ways. We send a signal to the Post Office every hour. These hourly signals are used, amongst other purposes for controlling the Post Office Talking Clock, from which you can obtain the time at any instant of the day or night. You can judge of the popularity of the use of this facility by the fact that there are about 18,000,000 calls a year on the Post Office clock. The well-known " six-pips " signal is sent out automatically to the British Broadcasting Corporation every fifteen minutes, and is broadcast several times daily. There is also a clock sending rhythmic time signals via the Rugby radio station to shipping all over the world twice daily ; sixty-one signals are sent out in the course of one minute, to facilitate exact comparison with clocks or chronometers. We receive signals from other countries for comparing time as determined at Greenwich with time determined elsewhere. The comparisons of these times is proving a network of accurately determined longitudes.

We also observe and record the variations of the earth's magnetism. Greenwich was the first observatory to make continuous records of such variations, and we now have records going back nearly a century. Of

particular interest are the large variations—the so-called magnetic storms which may interfere with telephone and telegraph services. The occurrence of these storms is often directly associated with large spots on the sun. Related to the study of the earth's magnetism we therefore have continuous photography, day by day, of the sun's surface, in order to keep a record of the sunspots. At any one observatory it is not possible to get a complete record of the sun; we average 240 days a year at Greenwich. The Observatory at the Cape of Good Hope, which also belongs to the Admiralty, does the same work, and sends its photographs to Greenwich. At the Cape the sun is photographed on the average about 345 days a year. If there is a day missing from the contribution of the two series, we get it either from India or from Mount Wilson in California. We thus have a complete daily record of the sun's surface for the study of the phenomena associated with these sunspots. The sunspot cycle is of about eleven years, but it is not a regular thing, and is unpredictable. It is found that when sunspots are most numerous the compass needle has an average daily movement 60 per cent. larger than at times of sunspot minima. Another phenomenon that has been much studied recently are sudden bright eruptions on localised portions of the sun's surface. These eruptions have acquired great importance because it has been proved (it was first established conclusively at Greenwich) that associated with these eruptions there are sudden fadings on short-wave radio transmission. It seems that a disturbance of some sort takes place on the sun, resulting in greatly increased emission of its ultra violet rays, these disturb the layers of the earth's atmosphere that reflect the short-wave radio signals back to the earth; the signals are no longer regularly reflected, and therefore they fade out. The study of this phenomenon, its causes and its dependance on the sun-spot cycle is of considerable importance at the present time.

There is also the work of measuring star distances, upon which we have been engaged for some years. When I tell you that the nearest star is 25 million million miles away, you will realise the difficulty of measuring such great distances. It is perhaps the most refined of all astronomical observations and particular care has to be used to eliminate every possible source of error. A knowledge of star distances is necessary for many purposes in astronomy. It is pre-eminently the duty of a large national observatory to supply the fundamental data of the science; university and private observatories, with their smaller staffs, can rarely undertake these long-range programmes.

A recent gift to the Observatory was a 36-inch reflector, which is at present being employed in measuring the temperatures of stars. A unique instrument is a telescope that is actually floating in mercury; it is used

to measure the changes of latitude or the movement of the North Pole itself. The North Pole is not fixed on the earth but wanders round in a rather irregular way, in a circle whose radius is about 30 ft. With this instrument we can detect the movement of one foot in the North Pole. Observations have been carried on with that instrument for twenty-five years. Amongst other results, these observations have shown that during that time the position of Greenwich has not moved, with respect to the mean pole, by more than five feet. This is not very encouraging for those who believe in Wegener's theory of drifting continents!

One of our chief difficulties nowadays is the thick smoky atmosphere, resulting from the great growth of London and particularly the growth to the southwards of Greenwich. Another great handicap is the increasing brightness of the sky at night, due to modern methods of road illumination and the use of neon signs for advertisement purposes. The needs of the motorist for brightly lit roads are not compatible with the needs of the astronomer, who requires a dark sky. Many types of observation have now become impossible at Greenwich, because of the deterioration of the conditions. We have existed since 1675 on one site; but it may be that we shall have to follow the course of observatories elsewhere, and go out into the wilderness where we can get the darkness we need to carry on our observations.

DISCUSSION

ADMIRAL SIR F. C. DREYER: I have derived particular pleasure from this lecture because my father was an astronomer. The range of work at Greenwich is so great that the Astronomer Royal has only been able to touch on it very lightly, but everyone must be impressed by the fact that the reason he produces such valuable results is that his work is based on pure science. If one goes out to China and to the oldest observatory in the world, at Peking, as I did in 1933 and 1934, one sees instruments erected at the time of Kublai Khan in 1279 with which for centuries the Chinese recorded observations; but they were able to do little with them, because their knowledge of science was so limited; they knew almost nothing about spherical trigonometry.

This business of getting results from the heavens is to us sailors of immense interest. Consider the difficulties of those great navigators, Christopher Columbus, Magellan, and Vasco da Gama, who sailed about the oceans under the delusion that the sun went round the earth. They, of course, owed their knowledge of navigation largely to the efforts of a landsman known as Prince Henry the Navigator, who died in 1460. He was not a navigator at all: his navigation was limited, I believe, to someone once taking him across from Portugal to Morocco; but he did collect all the available navigational data in the world, and it was these which enabled those intrepid seamen of that era to make such tremendous voyages.

Then between 1500 and 1630 a flood of light was thrown on astronomical matters by Copernicus, Tycho Brahé, Galileo and Kepler. (The telescope—Galileo's—was first directed on the heavens in 1609.) Finally a great Englishman—Sir Isaac Newton—who died in 1727—proved that Kepler's improved Copernican Planetary System not only agreed with observation, but that no other system was possible.

It was Newton who called on the Government to give a prize of £20,000 to encourage the production of a chronometer, without which we sailors generally would have been unable to obtain our longitude other than by dead reckoning. Christopher Columbus, because his longitude was a bit out, died under the impression that he had reached the coast of Asia; he was unaware that the great breakwater of the American continent existed in between.

A Jesuit Father Gherzi, whom I made friends with in 1933-1936 at the Zikawei Observatory at Shanghai (he had succeeded the famous Dr. Froc there), propounded to me in 1935 a theory as to how we could work out the set or drift which we would experience as an aftermath of typhoons. I communicated his theory to the Hydrographer, and it was promulgated in a Notice to Mariners.

The Japanese make great use of meteorological data. In 1934 I was at Chemulpo in Corea in a sloop. We had an afternoon party on board, with a number of ladies, also the Bishop. The Japanese director of a local observatory came to me and with much bowing informed me that a typhoon would be on us in so many hours. I had been brought up in three observatories, apart from my naval training, so I had steam raised, furled awnings and had the party dispersed, notwithstanding the protests of the Bishop, who said they had never had a typhoon there. We cleared out and only just got back to a sheltered anchorage across the bows of the typhoon.

Herr Hitler, of course, takes a different view of science. As Einstein, the greatest scientist since Newton, is not of pure Aryan blood, he has been thrown out. But we also have cause to blush, for over in Ireland Lord Rosse's observatory at Birr has been broken up; the Markree observatory at Sligo has gone; and what used to be the Royal Observatory at Dunsink near Dublin has been shut down. The last remaining Irish observatory, at Armagh, prospers: I am thankful to say the people of Northern Ireland have a proper respect for science, and they are voting more money to that observatory than it has had before.

ADMIRAL SIR R. G. O. TUPPER: What is the number of the personnel of the Royal Observatory at Greenwich?

VICE-ADMIRAL GORDON CAMPBELL: Is there liaison between the Meteorological Office and the Observatory, for telling weather forecasts?

THE LECTURER:

The answer to the question about personnel, is that there are about eighty, including the Nautical Almanac Office and the Industrial Staff.

As to Admiral Campbell's question, we send observations to the Meteorological Office, which comes under the Air Ministry. We always work in close and friendly collaboration with them.

THE CHAIRMAN:

I think everybody will agree with me that we have listened to a most instructive and interesting lecture. There was one item of particular interest to me and to naval officers generally; that was a reference to Dr. Halley's investigations in Magnetic Variation. I daresay some of you did not know before that besides being Astronomer Royal, Halley held a commission as a Post Captain in the Navy.

We had a certain amount of information about the pay of the Astronomer Royal. Well, £100 a year, even in the XVIIth century, was not very much, and when he had to provide instruments out of it, that pittance went an even shorter

distance. Halley, as a Post Captain, was drawing, I think, £180 a year, and having returned to the Observatory as Astronomer Royal he petitioned his Sovereign, and was allowed to retain his naval pay. I was surprised to learn that his successor, Bradley, reverted to the £100 a year.

The recent expansion of the staff of the Royal Observatory and the Nautical Almanac Office can be traced to the growing need for accuracy in time, and for rapid methods of determining position at sea and in the air. It is one of the duties of the Royal Observatory staff to keep track of Magnetic Variation. It is partly because they were unable to carry on this work owing to the loss of the " Carnegie," that the Royal Research Ship " Research " is now being built. Perhaps, later on, we shall be able to persuade the Astronomer Royal to follow his predecessors and take a cruise.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

GERMANY'S FIRST IRONCLADS

By Frank C. Bowen.

IN view of Germany's naval aspirations to-day, and the methods that she is employing to attain them, it is interesting and not a little amusing to recall the circumstances in which she acquired her first two ironclads. In 1848, when the Germanic Confederation went to war with Denmark over the Schleswig-Holstein question, the German States received a sharp lesson in the meaning of sea power. Encouraged by Prince Adalbert of Prussia, there was a popular demand for a navy, and public gifts in cash and kind soon provided a collection of ships to fly the flag of the Confederation. Two of the pioneer Cunard liners were bought from Britain and armed, several German trading ships were converted into warships, and one or two small vessels were laid down. At that time the Confederation did not aim at anything approaching a capital ship, and the public were very soon disappointed in the prize money which they had expected to get by means of this heterogeneous fleet. Before long the inland states were complaining bitterly at being expected to contribute to its maintenance while Prussia and Oldenburg were getting all the benefit from it. When some of the units engaged Danish vessels within the territorial waters of Heligoland, which was then British territory, the Confederation received a sharp note from Lord Palmerston that their flag had never been recognised at sea—that was due to the Frankfurt Diet having neglected to seek such recognition—and that any armed ships flying it were liable to be regarded as pirates. Germany was very deeply offended at this slight—it is used as propaganda to this day—but it gave the inland states just the opportunity that they wanted to press their protest against the cost of the fleet. So it came to an undignified end under the auctioneer's hammer, the General Steam Navigation Company of London buying the best of its ships to carry passengers and cargo in the coasting trade.

Prince Adalbert was naturally bitterly disappointed at this ludicrous end to his pet venture, but he was determined that the Prussian Navy, which had been developed alongside that of the Confederation, should carry on and he remained in control of it until after the Franco-Prussian War. A number of ships were built : a host of small gun vessels and the like for coast protection, and a few inferior frigates for commerce destruction—for even at that early date the destruction of merchant shipping was one of the prime factors in German naval policy—but once again

this embryo fleet did not aspire to anything of importance. Yet the Prince dreamed of naval expansion ; but for that two bases were required, one in the North Sea and the other in the Baltic. An arrangement with the Grand Duke of Oldenburg, under which Prussia gave £75,000 and a promise to protect the coast and commerce of Oldenberg, secured them five square miles of marshland which was to become the site of the Wilhelmshaven Naval Dockyard, and it was very largely to obtain possession of Kiel Bay that Prussia forced the war of 1864 on Denmark and then refused to give up the provinces of Schleswig and Holstein. The construction of the Kiel naval base had commenced before the territory was even definitely ceded.

But that war had again put Prussia into the humiliating position of having her coasts closely blockaded by the Danes, and while her armies were everywhere victorious on land, the Prussian ships seldom dared venture far away from the protection of their coastal batteries, even when they had the support of the Austrian Squadron. Immediately after the war, therefore, Prince Adalbert had his opportunity of appealing to Prussian national pride, and was given the funds to buy two ironclads—the British-built " Arminius," which was paid for very largely by public subscription, and the French-built " Cheops," which was renamed the " Prinz Adalbert " in his honour. Both of these ships were quite interesting in their day.

The " Arminius " had recently been completed by Messrs. Samuda Bros., who then owned one of the most important shipyards on the River Thames and who had built her as a speculation. Captain Cowper Coles had not yet contrived to raise sufficient public pressure to persuade the Admiralty to build the luckless " Captain," but his idea of a turret battleship of considerable size had attracted great attention among naval architects and shipbuilders, and Samuda's were willing to give it a trial. In principle her design was very similar to that of the Danish monitor " Rolf Krake," which had given the Prussians so much trouble during the war ; she was a single screw, wooden-hulled ship, built principally of the finest teak, with a 4½-in. iron armour belt and 7-in. turrets. She was 200 feet long by 36 feet beam by 13 feet draught, having a displacement of 1,623 tons. Penns of Greenwich built her two-cylinder simple engine of 1,200 indicated horse-power, intended to give her a speed of 10 knots, and also the four boilers. She stowed 171 tons of coal, and was ready for sea with the exception of the guns for her two turrets, which were to be supplied according to the taste of her purchaser. The Prussians bought her at a price that was quite satisfactory to her builders, and Krupp not yet having persuaded the Berlin authorities of the superiority of his breach-loading principle, she was first armed with

four 8.2-in muzzle-loaders, although these were later changed to short breech-loaders of the same calibre.

The " Cheops " had a much more interesting early history, for she was laid down by Messrs. Arman Frères of Bordeaux for the Confederate Navy during the American Civil War. At that time the Southern navy's credit in Great Britain had been greatly exceeded by their purchases of war material, and it was feared that their financial agents might sue them, while the British Foreign Office had become very much more careful since the " Alabama " had slipped out of the Mersey and looked like causing trouble with the Federal Government through her captures. The Confederate agents therefore determined to try French yards instead of British for their next orders and they were informed that the Emperor Napoleon III was very anxious for these orders to be placed and to give them every encouragement. It may be mentioned that this information came to the Confederate agents through the shipbuilder who had been told by a prominent politician that the Emperor had expressed these sentiments, but they were never put down on paper and were afterwards repudiated. Monsieur Arman had a flourishing shipyard at Bordeaux which had carried out a number of contracts for the French Navy, and which had two ironclads on the stocks when the Confederate agents visited his yard. They ordered four improved editions of the " Alabama," each to be of 1,500 tons mounting fourteen 5.9-in. French guns ; but their attention constantly returned to the two ironclads. It seemed that ships of similar design should be quite capable of making an end of the Federal fleet which had recently obtained the control of the Lower Mississippi. Monsieur Arman was quite willing to draw out plans of similar ships which would have sufficiently light draught for the purpose, and these appeared so satisfactory that two were immediately ordered. The Confederate agents had to face financial difficulties, for the army had obtained control of all the Confederate money in Europe to buy munitions; so it was arranged that the ships should be paid for with cotton brought out of the South by blockade runners. When it was discovered how much this barter arrangement was adding to the price, however, it was arranged with Frankfurt bankers to raise a loan and the instalments were paid in cash.

The ships were naturally suspected by the Federal agents as soon as their construction had started, but they were nearly completed before proof was obtained by bribing a clerk in the office of one of the sub-contractors. The Northerners immediately lodged a diplomatic protest with France, whereupon the builders suggested that it would be easy to arrange a dummy transfer to a banker in Denmark, then at war with Germany, and Germany immediately lodged an equally emphatic

protest. It was then suggested that if the Confederates would sacrifice one of the ironclads to the Swedes they could get possession of the other through Stockholm, but the Emperor Napoleon III, whatever his original ideas may have been, was now determined that none of the ships should reach the Confederates in any circumstances, and took precautions that they should not sail unless he approved of the purchaser. So the improved "Alabama" went to Peru, one of the ironclads went to Denmark and later became the first armoured ship in the Japanese Navy, while the "Cheops" went to Prussia. The last-named was a vessel 186 feet long by 32 beam, with a maximum draught of 14 feet 4 in. for work on the Mississippi, and had a displacement of 1,440 tons. She had a long ram and light schooner rig and was one of the ugliest ships of a period which produced many ugly vessels. She was driven by twin screws, each having a two-cylinder simple engine by Mazeline of Havre, the total indicated horse-power being 1,200, which was supposed by the original contract to give a trial speed of 12 knots in smooth water, but which never gave more than $9\frac{1}{2}$ on service. The builders of the engines also supplied the two boilers which were placed in one boiler room. Her iron armour belt was $4\frac{3}{4}$ in. thick amidships, tapering to $3\frac{1}{2}$ in. at the ends, and the original armament planned for her was one 300-pdr. Armstrong gun forward and two 6-in. muzzle-loading rifles aft, although in the German Navy she carried one 8.2-in. forward and two 6.7-in. aft.

As their first twin-screw ship the Prussians were immensely proud of her, but they soon changed their ideas, which is not surprising when one notes that the English captain who was commissioned to deliver her sister ship, the "Asama Kan" ex "Stonewall," to Yokohama cabled home from every port of call that she would never finish the journey, but must inevitably founder, although in that he proved unduly pessimistic. In 1868 the "Prinz Adalbert" was taken in hand for a thorough reconstruction at the Geestemunde Naval Yard, but although the Prussians spent much more than they could afford on her they could not make her satisfactory, and after doing nothing in the Franco-German War she was broken up in 1878.

The "Arminius" was not much more successful as a fighting ship, for she also spent the period of the Franco-Prussian War behind the German minefields. Her hull, however, was far better built than that of the "Cheops," so that in 1872 she was made an engineering training ship and ten years later was used as an icebreaker to keep Kiel Harbour open, becoming a tender to the torpedo schoolship "Blücher" in the same year. In the spring of 1901 she was finally condemned and was sold out of the navy for 72,000 marks, being broken up at Hamburg in the following year. So ended Germany's first effort to acquire capital ships.

WAR ON SKIS

THE MOBILE FORCES OF THE NORTH

(By courtesy of " The Times.")

THE gallant defence of Finland is a spectacular example of war on skis. Yet ski warfare is far from new. The ski has been known throughout the North of Europe and Asia for thousands of years. The oldest specimens, found in the marshes of Kalvtraesk in Sweden, are believed to be about 5,000 years old. Hunting on skis is mentioned in the annals of the Chinese dynasty Tang (A.D. 907-918). It is safe to assume that skis have played their part in the migration of peoples.

The first historical instance of the military use of skis is the battle of Isen, near Oslo, in 1200, where ski patrols of King Sverre were instrumental in his victory. According to Saxo Grammaticus, in 1204, Norwegian ski troops from Finnmark overwhelmed a superior Danish force of King Ragnar Ladbrok somewhere in the region of Petsamo. In the Northern Seven Years' War (1563-70), the Swedes used ski soldiers against the Norwegians with great success. In 1590 the Finns had another opportunity of resisting on skis a Russian invasion. The Swedish armies in Polish campaigns were also equipped with skis.

In 1718 ski training was introduced as part of regular military curriculum in the Swedish and Norwegian armies and fifteen years later in the Prussian army. In 1774 there appeared the first book of military ski regulations in Norway. At that time the necessity for camouflage was disregarded. A Norwegian ski soldier wore yellow trousers, a red jacket, and a red " Napoleonic " tricorne. But as early as 1788 the " field-grey " appeared in Scandinavian armies, though the white overalls were a twentieth-century invention. Skis in those heroic times were of unequal lengths ; the longer and narrower served for gliding, while the shorter and plumper ski, provided with a seal skin, was for climbing. There was also only one stick, but it was about twice as long as the present. In 1806 a Swedish captain introduced a stick with a bayonet on it ; and so equipped the Swedes and Finns fought against Russia in the Finnish war of 1808-09. In that war also the Russians attempted to cut Finland in two and were overwhelmed near Suomussalmi, though in the end they succeeded.

In 1902 ski-ing found its way into the French Army ; and Germany, Austro-Hungary, Italy, and Russia recognized the tactical importance of ski units for scouting, communication, and patrolling. The Russians

at that time appeared to be expert in ski-ing. As early as 1891 a ski detachment of the 20th Russian Infantry Division performed a ten days march of 697 kilometres in frost reaching 20° C. According to the German ski periodical *Der Winter* (1915) a Russian ski soldier was equipped with a sweater, a " bashtik " (a combination of a shawl and a hood), a warm woollen cap, and felt boots.

In the last war ski troops were used in the Alps on the Italian front, in the Carpathians, and in the Vosges in France. From 1914 dates the first British attempt at military ski-ing. The McGill University O.T.C. mustered a ski detachment, a tradition which is maintained by the Canadian Army. During the winter manœuvres of 1934 Canadian ski units, training in the Laurentians, displayed to great advantage their tactical abilities.

Great mobility (a good ski racer can easily cover a mile in about ten minutes) makes ski troops correspond to cavalry in tactics. In the Swedish Army cavalry and skiers unite in joint exercises, and a trooper carries a pair of foldable skis for use when the snow is too deep for a horse. Ski soldiers can be most advantageously employed for patrolling, ambushes and guerrilla warfare, communications, and scouting. But in the North whole infantry regiments move on skis, which are their version of mechanization. Dogs also are used to pull small sledges carrying heavy machine-guns and other kit.

In the Arctic twilight with frequent snowstorms and deep snow skiers alone are at their ease. A trained Scandinavian skier can easily build a snow hut, or igloo, wherein to spend the night comfortably. In deep snow it may be better to dig a hole with a narrow entrance, which is afterwards covered with tent cloth ; this is the practice of the Norwegian Army. But for such a bivouac warm clothes and a good sleeping bag are fundamental, and a " pulka " (a light sleigh which is pulled along by the skier) to lie on is desirable ; practice and tools are also necessary. Finally, though in Scandinavia it is easy to raise an army of good skiers and to equip it, there still remains to be mastered the complicated technique of ski warfare as it has been perfected by the Scandinavian General Staffs.

THE GERMAN AIR FORCE IN THE POLISH CAMPAIGN

(*Extract from an article in the* Revue des Questions de Défense Nationale *for October*, 1939. *By courtesy of that Journal.*)

IN the war against Germany, Poland could hardly hope to achieve victory against such a powerful adversary, but it was thought in some quarters that she might have held out longer and it is therefore of interest to examine some of the circumstances and methods which enabled the Germans to bring the campaign to such a swift conclusion.

To begin with it must be remembered that on the outbreak of hostilities the German army was completely mobilized, whereas Poland, to avoid giving any excuse for German aggression, was not fully mobilized. Thus it came about that on the very morning of her own general mobilization Poland was attacked by an army which was fully prepared for this action and vastly superior in numbers. Before dawn on 1st September the German air forces, estimated at a thousand aircraft ready to take off from strategic dispositions behind the frontier, launched their first attack, the object being to destroy as many Polish machines as possible while they were still on the ground and to render the aerodromes useless. After this initial action the air tactics of the Germans were carried out on the following lines.

A reconnaissance aeroplane first flew over the target; behind it would come a squadron of nine bombers protected by fighters. The flight from the frontier was carried out at a height of some 10,000 feet. The bombers came down in groups of three on to the target, and then dropped their bombs from heights of about 3,000 feet, either in one salvo, or in the course of two or three flights over the target. Finally the fighters would come right down to fire their machine guns on any aircraft or their personnel seen on the ground. When executing bombing dives the preliminary reconnaissance might be done by one aeroplane that would come low down in order to surround the target with a ring of white smoke on to which the bombers then made their dives.

The bombs were of different types, weighing from 23 to 1,100 lbs. (10 to 500 kilos). On sandy ground an appreciable number of them failed to explode. The bombs of 550 to 1,100 lbs. (250 and 500 kilos) made craters fifty to sixty-five feet in diameter (15 to 20 metres). Each of these might bring down a good-sized building; but there was no horizontal effect unless they fell on a road or very hard ground.

Often the fighters would follow immediately on the bombardment and attack the aerodrome with light bombs, cannon or machine guns

in the course of low flights. Certain aerodromes were thus attacked several times during the course of a single day. The Polish air bases situated furthest from the frontiers had been carefully located beforehand and were bombed within a few hours of the opening of the attack. It may be assumed that one-fifth of the Polish aircraft were destroyed by these surprise attacks and that every known aerodrome was put out of action. The anti-aircraft defence was too weak at each one of the points attacked since its resources were scattered over an excessively wide area. It was almost annihilated by the suddenness of the attack, while the novel procedure of the bombing dive disorganized the entire system of anti-aircraft defence.

From that moment the aggressor gained full command of the air. The Polish aviators, now distressed and forced to take off from improvised aerodromes, badly supplied, and having lost all repair shops, were unable to do more than bring down, by fine individual exploits, the greatest possible number of German aircraft. But they were quite unable to hold up the German air force in pursuit of its ends.

The mission of the German air force was indeed of the highest importance. In addition to tasks of reconnaissance, it had been charged with :—

(1) The attack of military objectives, command posts and industrial centres.

(2) The destruction of communications leading from the rear to the front.

(3) Harassing troops in retreat.

(4) Scouting ahead of the motorized units that had been sent ahead into the heart of Poland, and to combine with these units in action.

(5) The bombing of towns so as to disorganize the State and attack the national morale.

In the attack of military objectives, carried out from all heights from ground level flights to 16,000 feet altitude, the German aircraft hampered the working of the various phases of the rather complicated Polish mobilization, whilst it disorganised the entire chain of command throughout the military hierarchy. By the destruction of factories, and especially factories producing aviation material, all of which had been carefully located in advance, the German aircraft paralysed such remnants of the Polish air forces as had survived the original attack. As soon as these tasks had been accomplished, the German aircraft displayed intense activity behind the Polish front in destroying railway stations and tracks, cutting roads and all electric wires. By means of bombs, grenades and

machine guns they attacked convoys and retreating troops so as to drive them to take cover throughout daylight hours ; by these means they aimed at preventing higher formations from re-uniting. They even pursued the fleeing civil population, machine gunning isolated groups in the fields, railway trains carrying evacuees or labour gangs repairing damage already done. But such tasks of destruction and of interference were by no means all ; they played an active part in ground operations by combining with motorized troops whose work was all-important in this war of movement. These large motorized formations were not charged with the mission of gaining ground, nor of occupying it ; their duty was to break the front, then immediately afterwards to outflank the Polish troops that were making a defensive front on either side of the breach, and then to drive ahead as quickly as possible into the interior of the country in order to occupy road junctions, bridges and distant strategic points. The German aircraft preceded them, reconnoitred their march, signalled to them any points of serious resistance which must be outflanked ; for these were never forced. The aircraft cleared the ground ahead by attacking from ground level any assemblages of troops able to oppose their passage. Even though the losses inflicted on these elements of resistance were slight, these sudden aerial attacks, so far from the front, produced the desired moral effect.

According to certain reports, the aircraft, in addition, were engaged in supplying the motorized columns when these were too far distant from their normal columns ; they would then bring them petrol in barrels that were landed by parachute. This detail, however, has not been officially confirmed.

The bombing of open towns, starting from the middle of September, grew to be one of the principal and most ruthless tasks of the German air force. At the start of the operations the bombing aircraft seemed to apply themselves first and foremost to attacking stations or bridges ; then the bombs fell wider and wider until a whole town might suffer.

Lastly, there is a rumour that a very small number of parachutists, seemingly charged with the task of destroying communications, were dropped in the course of this sudden attack, but it would appear that the results achieved were not of any importance.

During this offensive in Poland, the German aircraft were favoured by the stunning effect of its surprise, by an enormous numerical superiority, by the utter inadequacy of the anti-aircraft defence, and also by unexpected meteorological conditions. On any other front where all these conditions making for success might not be forthcoming, such an attempt might well follow an entirely different course. But there are masterstrokes which it is difficult to repeat !

THE INTERNATIONAL SITUATION

THE COURSE OF THE WAR

THE present war, like most great conflicts, can be reviewed under four main headings: Offensive and Defensive—as relating to current strategy, and Preparative and Objective—as relating to future policy.

OFFENSIVE

Because the sea offensive is for the most part so unspectacular and has, so far, involved only comparatively minor—though numerous—encounters, its importance and effect are not so self evident in this country as they are in Germany. Yet Mr. Cross, Minister of Economic Warfare, informed Parliament on 17th January that "after four and a half months of war we could fairly claim that there were no important leakages through the Contraband Control," and that "virtually the whole of Germany's imports which could be assailed by this weapon had been effectively stopped." They were, he said, looking forward to the day when they would so have strangled Germany's economic life that she could no longer sustain her war effort.

Our economic offensive, which is based on our control of all sea routes leading directly or indirectly to the enemy's country, is not being confined to the interception of incoming contraband. On 4th December, 1939, in retaliation for numerous infractions of international law, the Allies announced their intention to sequestrate all goods, found at sea in neutral ships, of German origin or laden in a German port, or of German ownership.

The counter-offensive of the Allies against the enemy's attacks on our shipping by mines, torpedoes, and surface raiders has been rigorous and effective. It is believed that at least half the U-boats with which Germany started the war have been sunk. The armoured ship "Graf Spee" lies at the bottom of Montevideo roadstead. At least one of the enemy's few light cruisers has been sunk, and one or two other cruisers severely damaged by British torpedoes.

The Air Force have co-operated with the Navy in attacking enemy submarines, and have carried the war to his own air bases in order to counter his minelaying aircraft.

DEFENSIVE.

While the Navy wages unceasing war against Germany's supplies, it is also keeping constant watch and ward over the sea routes and shipping which provide the life-blood of our country, and which enable us to maintain our armies and air forces overseas.

Mr. Winston Churchill, First Lord of the Admiralty, in a broadcast on 20th January said: "We feel ourselves more confident day by day in our ability to police the seas and oceans and keep open and active the salt-water highways by which we live and along which we shall draw the means of victory . . . After nearly five months of all they can do against us on the sea, the first U-boat campaign for the time being is utterly broken, the mining menace in good control, our shipping virtually undiminished, and all the oceans of the world free from surface raiders." Speaking, as he said, "with the utmost restraint and caution," he added ". . . I am sure that many losses and misfortunes are lying ahead of us . . .; but . . . I feel able to declare that at the Admiralty, as at the French Ministry of Marine, things are not going so badly . . . We look forward as the months go by to establishing such a degree of safe sailings as will enable the commerce of all the nations whose ships accept our guidance not only to live but to thrive."

In the course of a speech delivered on the same evening, Lord Halifax, Secretary of State for Foreign Affairs, said ". . . in spite of every breach of international law, Germany seems to have gained astonishingly little by it. Since the convoy system has been organized, something like 6,000 ships have been convoyed to the end of December, with the loss of only 12—one in 500." He also stated that 140,000 tons of German shipping had been run aground or scuttled.

The British Expeditionary Force is now firmly established with the French Army as one vast garrison for the Maginot Line, a defensive barrier the like of which there has never been before.

It is evident that the enemy has been trying to probe our air defences, but his feeble reconnaissances and desultory bombing raids have certainly not caused us to disclose to him either their depth or strength.

PREPARATIVE.

By attacking and destroying his weak neighbours one by one, Hitler shocked Britain out of her lethargy and false idealism as nothing else could have done. But he could not or would not believe that we would take up arms to stay his further marauding and he has thereby forfeited the advantages of that great principal of war—Surprise.

The sixteen months grace since the crisis of 1938 have been a godsend to the Allies. In this country it has enabled the Services and their suppliers to make good most of those fearsome gaps in our defences for which our misguided politicians were responsible and which have been the main cause of Hitler's villainies and of the present conflict. In France it has enabled M. Daladier to grip the reins of government, purge it of subversive elements, and knit the whole nation together. Every day sees us growing stronger relative to our enemy: our man power is being systematically marshalled and trained, instead of being the victim of voluntary chaos as it was in 1914; the curve of output of ships, ordnance, aircraft, and munitions is rising rapidly; moreover, in building up our resources for the battles to come, we have the invaluable guidance of experience in the last war.

There is, however, one side of the national effort which needs development, and that is what may be called the clerical side. Officers and men of the regular fighting Services, trained all their lives to be ready for war, adapt themselves speedily to its realities when it comes, and soon initiate their new brothers-in-arms into its environment. But, for administration "behind the lines," the Services have to rely to a very great extent on those who are wont to work to schedule, with their responsibilities, hours, and routine all carefully prescribed and rigidly adhered to. Even though they are no wit behind the rest of the country in their determination to win, they and their superiors are not yet in all cases war-minded; they do not always appreciate that time is a vital factor; that achievement is so much more important than procedure, and production than over-elaborate safeguards of expenditure. Extravagance in war is indefensible; but obstruction in the name of economy is only too liable to cause extravagant loss of life and panic waste. We are still largely in the preparative stage of this war, and every hour saved by shortening the minute, passing on the docket, obtaining the final decision, and above all, securing *action*, means just that much speeding up of our readiness when the real clash comes.

OBJECTIVE

The object in war is to break the enemy's will to fight; the objective is a victorious peace. In a broadcast speech on 26th November, the Prime Minister, alluding to our peace aims, said: "Our desire, when we have achieved our war aim, will be to establish a new Europe; not new in the sense of tearing up all the old frontier posts and redrawing the map according to the ideas of the victors, but a Europe with a new spirit in which the nations who inhabit it will approach their difficulties with good will and mutual tolerance. In such a Europe fear of aggression will have

ceased to exist and such adjustments of boundaries as will be necessary will be thrashed out . . . round a table. . . . In such a Europe it will be recognised that there can be no lasting peace unless there is a full and constant flow of trade. . . . In such a Europe each country will have the unfettered right to choose its own form of internal government so long as that government does not pursue an external policy injurious to its neighbours."

Mr. Chamberlain also vizualised a Europe where armaments will gradually be dropped, except in so far as they are needed to preserve internal law and order. This Utopia could not, he said, be the work of a few weeks or even months ; it would require many years. He hoped that, when it came to devising the machinery to develop the new Europe, a Germany animated by a new spirit might be among the nations which would take part in its operations.

But before we can attain this great objective we have got to overcome an enemy far more uncompromising that the kind we were fighting in the last war. In the course of the past twenty years, the Germans—especially the younger generation, have come increasingly under the domination of a gang of crude adventurers posing as great patriots. Hitler, Goering, Goebbels, Ribbentrop and their like, having achieved despotic power, have deliberately created a nation of robots to carry out their ruthless purpose. We are not now dealing with the old militaristic Germany of the Kaiser, with its pomp and ceremony, and its wooden discipline ; the Germany of to-day is something the like of which the world has never seen before in its contempt for all civilised decency, its indifference to human suffering, and its utter subjection to its savage rulers.

Mr. Eden Phillpotts, in a letter to the *Daily Telegraph* of 13th December last, summarized the situation admirably when he said : " . . . a forward nation has become, for a passing moment in time, a ' backward ' nation in heart and mind and spirit. A great people has been raped and debauched by mortal pestilence, and not until peace is proclaimed on German soil can any confidence be restored that the lesson needful to her future destiny will ever be learned and the Nazi yoke destroyed."

THE SOVIET UNION, FINLAND, AND GERMANY

We can never be sufficiently thankful to Mr. Chamberlain and his supporters for refusing to submit to witless clamour and make a pact with Soviet Russia on Stalin's own terms. To quote Mr. Eden Phillpott's pungent letter again : " Our ' brittle intellectuals ' (the gentlemen who batten on England and infect the wounds they feed upon) shouted scorn at Parliament for bungling the suggested composition with the Soviets ; but had our Ministers accepted Stalin's terms, what must have been this country's attitude to such a treaty when its implications appeared, and where would those Ministers be to-day ? "

Now we see Stalin in his true colours—another brigand chief seeking to imitate Hitler's successes in tyrannizing and exploiting small neighbours. But Finland is not Poland, much less Czechoslovakia, and her very gallant stand against another pestilential bully is likely to have wide repercussions, even to the extent of hastening the collapse of those two world-scourges—bolshevism and nazi-ism.

The huge losses sustained by the Red Army are already shaking Stalin's prestige and may lead to the undermining of his whole regime. They certainly preclude Russia from giving any useful support to Germany in the shape of those commodities which she has been eagerly awaiting.

The pact with Russia over Poland had already cracked the unity of the German people, and Soviet adventures in the Baltic have tended to widen the fissure. The waters of that sea were a very special interest to Germany, and until recently her naval strategy was largely related to their security. The Baltic States, Finland and Sweden formed a neutral ring which Germany liked to feel she dominated. The first have been made to provide outposts for Russia ; Finland is threatened because she refused to do likewise ; Sweden is marked down as the next victim. No wonder the German high command is anxious ; no wonder the infallibility of the Fuehrer is beginning to be questioned—even by his own robots.

FINLAND

SOME PERSONAL IMPRESSIONS

By George Dott

WHEN the writer visited the Petsamo district of Finland in the summer of 1938, he little imagined that within less than eighteen months its name would be broadcast all over the world as the scene of important fighting. For most people its appearance meant a vain search on out-of-date atlases. Even since 1925, when the official Finnish atlas was published, the country has been greatly opened up, and in fact the *Finland Yearbook for 1936* does not show the completed Arctic Highway—the 320 mile road from the railhead at Rovaniemi to Liinahamari on the Petsamo fjord, which is the Petchenga of Russian days and the Peisanger of Norwegian charts

The Petsamo district did not become definitely Finnish territory until the Treaty of Dorpat in 1920; prior to that it ranked as part of Russia, not Finland It is now an oblong strip between Russia and Norway, about 220 km. from North to South, with a maximum width of 70 km. and a population of only 2,800, mostly Lapps. Its main geographical features are the Paatsjoki and Petsamojoki, the former forming the frontier with Norway and the latter about 20 km. from the artificial frontier with Russia. The Paatsjoki flows into Norwegian territory at Elvenes, and the Bogfjord, and is only navigable for boats above that point, but the Petsamojoki flows into the fjord of that name, the mouth of which is only 20 km. West of the neck of the Rybatchy peninsula, and is 20 fathoms deep in mid-channel at Trifona, eight miles from the mouth. Until quite recent years there was not even a village in the district, and the general name Petsamo was conferred on a collection of scattered settlements. Trifona was the end of the Arctic Highway and the "port" as late as 1936, since when the road has been extended to Liinahamari, where two quays have been built. Here, too, there is a definite beach, but the sides of the fjord itself are steep as those of any other fjord; the Rybatchy, on the other hand, is shingle, rising by gentle scarps to a plateau. The district has been described as 70 km. wide, but for 45 km. South of the mouth of Petsamo fjord it is only some 30-40 km. wide and hilly on both sides. The hills of Lapland, however, are seldom more than 1,500 feet in height and so rounded in outline that in one case a branch of the main road is taken to the top and the tourist conducted there in

a bus. The country is composed of moss or peat bog over a clay subsoil and covered by dwarf birch, but the further North one goes the more sparse and stunted are the trees, and on the Rybatchy peninsula there is no vegetation save tundra grass.

From Liinahamari the Arctic Highway follows the Petsamojoki to Ylaluostari, where is an ancient monastery. It then turns westward, following the foot of the Petsamo fells to reach the Paatsjoki near Salmijarvi. Apart from the importance conferred upon it by the discovery of nickel in the vicinity, Salmijarvi is important as a nodal point. A few miles across the lake lies the Norwegian town of Svanvik from which a road runs to Kirkenes. A mile or two North, on the main road, a branch takes off to follow the Finnish side of the Paatsjoki, past the Janiskoski Rapids to the Koltta falls, where the bridge, building at the time of our visit, has doubtless been completed. On the opposite side is Kolttakongas, a Lapp summer village which, for the convenience of that nomadic people, has been turned into a square mile of Finland.

From Salmijarvi southward the road follows the Paatsjoki to Pitkajarvi, Höyhenjarvi, and Nautsi, where it parts company both with the Norwegian frontier and the Petsamo district. This was the old Russian frontier and apparently the limit of the recent Russian invasion. But, as the arctic gateway would be useless without the road, it is desirable to say something about it. About 30 km. South of Nautsi the road reaches Virtaniemi and the shore of Lake Inari which it follows to Ivalo. Thereafter it encounters its only real climb—the watershed of Kaunispaa, where it climbs above the treeline and is protected by snow fences. The only other places of any importance before Rovaniemi are Vuotso and Sodankyla. Some distance North of Sodankyla is the only ferry on the road, and a distinctly primitive one, the crossing of the Kitinen river, about 180 yards wide, at Peurasuvanto. The road, though neither tarred nor macadamed, has a remarkably firm surface, few heavy gradients, and no bad bends. Although normally a single track it could be easily doubled over most of its length, except, of course, at bridges, which are frequently of the double trestle type.

North of Sodankyla the places mentioned are mere hamlets. As late as 1925 the official atlas treats the district as an economic desert—it does not even mention timber. The timber trade, however, is now quite an important one ; there are small mills at Nautsi and Salmijarvi and every night during our stay timber was loosed over the Koltta falls to float down to the Norwegian mill at Elvenes. Kirkenes owes its existence to the Kalvas iron mines a few miles inland, and has quite modern ore loading equipment. According to the Finnish geological survey, iron and lead also exist on the Finnish side, but could not be

economically opened up. A good deal of misconception exists about the nickel mines on the Kolosjoki about seven miles from Salmijarvi. The mineral was proved in 1936 and about a year spent in boring. At the time of our visit the main tunnel was being driven to meet the shaft and ore bed, and it was hoped to complete these by the end of 1938. But the equipment then was Diesel; for full development and the working of a smelter it was necessary to have hydro-electric power by harnessing the 25,000 h.p. of the Janiskoski Rapids. This work had not then begun and was not in fact commenced till just before the outbreak of war.

It is a little extraordinary that the Finns appear to have made no preparations to defend this vital "back door." There is a barrack for frontier guards at Ylaluostari, but no real military centre and no defences; it is, in fact, not least of the "miracles" wrought by the Finnish army that it arrived in time to defend this district at all against the Russians coming only 150 miles by sea from Murmansk. But this brings one to the subject of the general defence of Finland and the character of the people. The most fantastic falsehood which anyone could tell about them—and the Russians told it—is that they are susceptible to influence by the British, French or any other people. On the contrary, they strike one as being more obstinately determined to go their own way than any other nation in Europe. It is unnecessary to emphasize their enthusiasm for physical culture and their abstemiousness—milk and coffee are the favourite drinks. They are a poor people and as in the case of the ancient Scots, a hard life has taught them endurance, faith, and tremendous tenacity.

The Fighting Services

Conscription is universal—though it may be remarked that conscientious objectors can select non-combatant duties. The annual contingent is about 26,000 and the active army about the same strength. Conscripts normally begin their service at 21 and do 350 days—officers and N.C.O's 440 days. Thereafter till the age of 40 they are in the first reserve, doing possibly a fortnight's training per year. The second reserve is apparently only completed in emergency and contains all those with completed training over 40, all previous exemptions and lads of 17 to 21. Officers appear to be selected on the score of educational qualifications and general suitability and after a two-year cadet course must serve a further three years as officers. In addition to the regular army there is the Civic Guard, which appears to be a cross between our Territorials and the Sokol idea—it has 100,000 members, but some of these are elderly folk who merely contribute to the funds. It has short

training manœuvres once a year and at all times carries on athletic training. There is also the Frontier Guard—four battalions of re-enlisted men, with cadres of officers and N.C.O's from the regular army. Lastly there is the Lotta Svard organization of women, available for substantially the same services as our A.T.S. and about 72,000 strong. Before passing on to other arms it may be well to note that the regular army normally consists of three divisions and a cavalry brigade, totalling 22 battalions of infantry, 11 squadrons of cavalry, and 13 companies each of machine gunners, anti-tank and mortars, cyclists, signallers and engineers. There are 17 batteries of field artillery, 9 train companies and one tank company.

The coastline of Finland, in the Baltic and Gulf of Bothnia, is reputed to be one of the best defended in Europe—and this work accounts for two whole regiments of coast artillery as well as two independent sections. There are three aviation regiments and one devoted to anti-aircraft work.

The navy consists chiefly of two modern coast-defence ships of 4,000 tons, and 15 knots, mounting four 10-in. guns apiece, and about as well protected as the "Deutschland" class; and three small submarines. Apart from several gunboats—four of them on Lake Ladoga—the remaining craft are small motor-driven minelayers, sweepers, patrol boats and C.M.B's. The coastline, with its 30,000 islands, lends itself admirably to mining defence.

DIARY OF THE WAR AGAINST GERMANY, 1939-40

22nd October.—Early in the afternoon two enemy aircraft were seen over south-eastern Scotland. R.A.F. machines intercepted them, and one of the enemy was shot down.

It was **reported from Australia that between 15,000 and 20,000 men would be called up** for compulsory training in January next. The present intention is to stabilize the Militia, including volunteers, at a figure between 75,000 and 80,000.

23rd October.—**Newfoundland began to recruit 625 men for the Royal Navy.**

The Finnish delegation reached Moscow again and negotiations were resumed, but late at night the Finns announced that they must return home for fresh instructions.

24th October.—Arrangements were completed for the mobilization of Poles resident in Great Britain.

The arrival was reported at Kola Bay (near Murmansk) of the U.S. ship " City of Flint " in charge of a German prize crew, who were alleged to have been interned by the Russians. The ship carried a cargo for British ports, and had been stopped in the Atlantic by a German warship.

Herr von Ribbentrop broadcast from Danzig; he merely repeated the old Nazi calumnies and misrepresentations, and said that the Führer guaranteed a German victory. He directed special threats against Great Britain.

25th October.—The Air Ministry announced in the evening that the reconnaissances carried out by the R.A.F. during the past twenty-four hours included **flights over Berlin, Magdeburg and Hamburg.**

News was received that the German armoured ship " Deutschland," operating in the Atlantic, had sunk one British and one Norwegian steamer. She had also seized the " City of Flint," whose German prize crew had been released from internment by the Russians.

26th October.—In the House of Commons the Prime Minister summarized the recent work of the Royal Navy and Royal Air Force. Referring to the continued success of the anti-submarine campaign

by which the U-boats had been driven to operate farther and farther from their bases, he commented upon the increased " lawlessness " of their commanders.

The wreck of a U-boat, with some sixty bodies, was found on the Goodwin Sands.

It was reported that the two German armoured ships " Admiral Scheer " and " Deutschland " were operating in the Atlantic.

The Russian authorities ordered the release of the " City of Flint," and requested her to leave port immediately.

The text of Russia's protest against the British Contraband Control was published.

27th October.—A report from Moscow *via* Germany said that the " City of Flint " had left Murmansk on the previous day.

By a two-thirds majority the **U.S.A. Senate voted for the removal of the arms embargo** in the Neutrality Act.

28th October.—A German aeroplane attempting to reconnoitre the Firth of Forth was engaged by British fighter aircraft and forced down near Dalkeith.

Early in the week there was some recurrence of successful U-boat action, and casualties included six British and two neutral ships; but the situation at sea remained, on the whole, satisfactory. A further report on the German air attack upon a convoy on 21st October showed how efficiently the merchant vessels, their escort, and R.A.F. fighters had combined to repel it.

Bad weather—bringing the first snow of the season—on the Western Front restricted operations and rendered more unlikely a German major offensive. Nevertheless, speculation was rife regarding the enemy's intentions as big concentrations of troops and air forces were reported not only on the Rhine-Moselle front but also facing Belgium and Holland. In general, however, it was anticipated that his offensive would, for the present, be confined to air attacks upon our naval bases and perhaps other objectives on or near the East coasts of England and Scotland.

From a diplomatic point of view the German Government seemed to have little to gain by delaying the intensification of their war effort. Although Russia had protested against the British contraband control and ruffled American susceptibilities by harbouring the " City of Flint " with its German prize crew, she had shown little inclination to afford Germany even moral support. The move of the American Senate towards the repeal of the U.S.A. arms embargo naturally caused intense mortification in Berlin.

29th October.—One British steamer was reported sunk by a German submarine and one Norwegian ship lost in circumstances unknown.

30th October.—R.A.F. machines made extensive reconnaissances of aerodromes in North Germany. Much valuable information was obtained and many photographs taken in spite of opposition. One aeroplane failed to return.

A British destroyer flotilla was in action with two German aeroplanes South of the Dogger Bank. No casualties or damage were suffered by the ships; it was not known whether the enemy sustained any loss.

The losses of the French mercantile marine for the first two months of the war were announced as six vessels, **total tonnage 41,000.** Four German ships had been intercepted, but one was scuttled by her crew, leaving a tonnage of 19,000 in French hands. The net French loss, therefore, equalled 22,000 tons, or about 1 per cent. of sea going traffic.

The "City of Flint" was reported to have called at Tromso, Norway, and left again.

31st October.—M. Molotoff, addressing the Supreme Council of the Soviet Union, implied that Great Britain and France were now the aggressors; after the collapse of Poland they had sought new excuses for continuing the war which Germany was striving to end. He emphasized the neutral attitude of Russia, and made public the precise nature of her demands upon Finland.

A reconstruction of the Italian Cabinet was announced, Marshal Graziani becoming Chief of the Army Staff. There were many other changes of which one of the most interesting was the appointment of Signor Starace, who had been Secretary-General of the Fascist Party since 1931, to be Chief of Staff of the Fascist Militia.

1st November.—The R.A.F. carried out successful reconnaissance flights over north-western Germany, taking many photographs. All machines returned safely.

The Minister of Economic Warfare announced that **during the first six weeks of the War the British and the French intercepted about 448,000 tons** of petrol, iron, aluminium, copper and phosphates among other things destined for Germany.

Lord Nuffield joined the Air Ministry as Director-General of Maintenance.

M. Molotoff's speech caused much misgiving in Scandinavia. The Finnish Government stated that the public disclosure of Russia's demands had " created a new and difficult situation."

2nd November.—On the Western Front there was patrol activity in some localities ; near Roubaix the R.A.F. shot down a German machine.

U.S.A. Congress approved by 243 votes to 181 **the repeal of the arms embargo** in the Neutrality Act.

3rd November.—Published figures showed that in the first eight weeks of the War the **Allied Contraband Control had intercepted and detained well over 500,000 tons.**

Mr. Churchill met M. Daladier, Vice-Admiral Darlan and M. Campinchi (French Minister for the Navy) in Paris for the **first Allied Naval Conference of the War.**

The American steamer " City of Flint " arrived at Haugesund, where the Norwegians interned the prize crew and set the ship free.

Russo-Finnish negotiations began in Moscow coincident with aggressive announcements by the Russian radio and press.

4th November.—**President Roosevelt signed the revised Neutrality Act ;** all American products were henceforth to be open to purchase by any belligerent who could pay for them and carry them away in its own ships, but American merchant ships might not now enter belligerent ports or operate in prescribed " combat zones," neither might American nationals travel under belligerent flags.

Two British, one French, and three neutral ships were lost during the week. Apart from the war at sea, chiefly remarkable for the continued success of the Allied Contraband Control, there was a distinct lull in hostilities. Secrecy in Berlin, where little information was vouchsafed to neutral journalists, gave rise to many rumours, one of the most persistent being that of differences between Hitler and his General Staff. The bad weather on the Western Front made a German big-scale offensive increasingly improbable, and an invasion of Holland to secure air bases nearer to the British coast seemed a desperate measure of dubious advantage to the enemy. German propaganda by press and radio, as usual wide and indiscriminate in the extreme, continued to be directed chiefly against Great Britain.

The lifting of the " arms embargo " by the U.S.A., so that belligerents were now allowed to buy war material in America provided that they could pay for it and transport it, caused no surprise. Obviously the Allies greatly benefited thereby ; but their North Atlantic traffic might

well become the chief objective of German submarines, and any enemy surface vessels which might be able to put to sea.

In continuing her negotiations with Finland, Russia made it known that she regarded that country as in the same category as the small Baltic states, and not as a member of the Scandinavian *bloc*. There was little indication that Soviet demands would be backed by force ; but the development of the policy of the U.S.S.R. towards Germany on the one hand and the Allies on the other tended to become an increasingly important factor.

5th November.—A German protest against the seizure of the " City of Flint " was rejected by Norway.

Sweden protested against the projected extension of the German minefield between the island of Moen and Falsterbo into the Swedish four-mile limit.

6th November.—On the Western Front **nine French aeroplanes engaged twenty-seven German aircraft and brought down nine,** seven falling on French soil. No French machine was lost.

Newfoundland started to recruit an infantry unit (establishment 1,275) for overseas service.

At the celebration of the twenty-second anniversary of the Bolshevik revolution the Communist International's manifesto described the governments of Great Britain, France and Germany as fighting for world domination at the expense of the workers ; and the Italian *bourgeoisie* was stated to be waiting a favourable opportunity to obtain its share of the spoils. M. Molotoff, Russian Foreign Minister, in his speech referred to the " capitalists' war " which was raging and affirmed Russia's neutrality.

7th November.—A photographic and visual reconnaissance over North-West Germany was carried out by the R.A.F. All but one aircraft returned safely.

The Admiralty announced that " certain of our light forces," including two Polish destroyers, were in action with German aircraft in the southern area of the North Sea. No damage was done to any ship ; it was not known if the enemy sustained casualties.

The German steamer " Uhenfels " was captured off the West Coast of Africa.

Queen Wilhelmina of Holland and King Leopold of Belgium addressed a joint appeal for peace to King George VI, the French President, and the *Reich* Chancellor, offering themselves as intermediaries.

8th November.—In the House of Commons Mr. Churchill admitted that at the time of the sinking of H.M.S. " Royal Oak " the anti-submarine defences of the Scapa Flow anchorage were not so complete as they might have been. Improvements had subsequently been made. He also announced the **loss by accidental explosion of H.M.S. " Oxley,"** submarine. His review of the progress of the war at sea was encouraging, the more so for not being unduly optimistic.

The quantity of **goods detained by the British Contraband Control** during the first nine weeks of the war (up to 4th November) was announced to be about **420,500 tons.**

Defensive preparations were continued by Belgium and Holland, the former reporting extensive violations of her neutrality by aeroplanes which were " neither British nor French." Holland decided to extend the inundation defences of her eastern frontier.

At Munich, on the occasion of the anniversary of the 1923 Nazi revolt, **Herr Hitler made a defiant speech,** threatening Great Britain. Soon after he left the beer hall cellar where the ceremony was held **a bomb explosion killed or wounded about seventy** of his guards and supporters.

The Turkish National Assembly ratified unanimously the pact of mutual assistance between Turkey, France and Great Britain.

9th November.—On the Western Front there was considerable patrol activity at night ; the Germans claimed the repulse of two minor attacks " during the last two days."

It was reported from Holland that, at Venloo, on the German-Dutch frontier, a clash between Dutchmen and German officials had resulted in one of the former being shot dead and others kidnapped and taken into Germany.

10th November.—During the day two R.A.F. machines of the Coastal Command engaged two German aircraft, one of which was driven down and sunk. There were no British casualties.

At night the R.A.F. carried out a reconnaissance of South-west Germany, flying over Stuttgart, Mannheim and Nuremberg. One machine failed to return.

The loss—fate unknown—was presumed of the auxiliary vessel H.M.S. " Northern Rover " with four officers and twenty-three ratings.

Two Swedish steamers with cargoes of pulp for America were seized by the Germans.

Owing to reports of increased German activity in concentrating troops near her frontier, Holland made preparations to flood the inundation areas on her main defence line. Belgium also increased her defensive measures.

11th November.—Tension in Holland relaxed, and Germany disclaimed any intention of invading her ; it was said that the German troops were " engaged upon manoeuvres."

No formal gatherings and no " two minutes silence " marked Armistice Day ; but poppies were sold as usual and wreaths were laid at the Cenotaph and at Memorials throughout the country.

Whilst the altruistic motives of Queen Wilhelmina and King Leopold in making their joint peace appeal were beyond doubt, the fears of Holland and Belgium that they might be drawn into hostilities were easy to understand, and it was natural that both countries should have taken defensive precautions against their aggressive neighbour. The week-end passed without serious incident, and the cautious attitude of the Dutch government was indicated by a reproof administered to foreign correspondents for reporting alarmist rumours.

The German opponents of the Nazi regime could hardly have been responsible for the Munich bomb explosion ; only amazing negligence on the part of the *Gestapo* could have given them the opportunity ; it seemed logical, therefore, to conclude that the affair was " staged " by the Nazi Government in order to arouse the horror of the German people and tighten their resolution.

It appeared that the Communist International was still the guiding influence of Russian policy ; Russia could be counted upon to remain neutral, according to her lights, whilst making use of all " peaceful " methods for her own aggrandisement.

12th November.—A R.A.F. bomber attacked a U-boat and was believed to have scored a direct hit ; the rough sea prevented accurate observation of the damage.

On the Western Front the Germans reported the failure of French attacks against a hill about seven miles S.W. of Pirmasens.

H.M. the King and President Lebrun replied to the joint peace appeal of Queen Wilhelmina and King Leopold.

A deadlock occurred in the Russo-Finnish negotiations.

13th November.—Two attacks upon the Shetland Islands were made by German aircraft, which dropped **the first bombs on British soil.** No damage was done, except to cottage windows, and one uninhabited house. About twenty bombs, each weighing 250 lbs., were released, but some fell into the sea.

The Admiralty announced that two German steamers had been intercepted by British warships, the German crews leaving their vessels in a sinking condition. Both were then sunk by British gun-fire.

The British steamer " Ponzano " was reported sunk by an explosion.

The Germans announced another local success following French attacks near Pirmasens.

Germany announced that she intended to respect the neutrality of Holland and Belgium so long as Great Britain and France did likewise, and so long as Holland and Belgium showed themselves capable of preserving that neutrality " in all strictness."

The Finnish delegates left Moscow for home.

14th November.—**The Admiralty announced the loss of a destroyer,** sunk through striking a German mine ; the casualties were three officers and eighteen ratings.

A Fleetwood trawler was reported shelled and sunk by a German submarine, without warning.

It was announced that **so far 3,070 ships had been convoyed with a loss of only 7 ships.**

15th November.—The German steamer " Leander," which had been captured by a British warship, was reported to have flown Russian colours.

During the week ended 11th November the British **Contraband Control** was stated to have detained about 6,500 tons of goods, bringing the **total during the first ten weeks of war to over 427,000 tons.** The French announced that up to the 10th November they had seized 223,297 tons.

Herr von Ribbentrop received the Belgian Ambassador and Dutch Minister ; he told them that as the result of the " blunt rejection " of the peace appeal by Great Britain and France the German Government considered the matter closed.

16th November.—The naval authorities at Cape Town announced the sinking of a small British tanker inside Portuguese territorial waters by a German armed merchantman or warship.

General Sikorski, Polish Prime Minister, discussed with Mr. Burgin, Minister of Supply, the equipment of the Polish forces which will co-operate with the Allies.

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[1] Subsequently reported to be H.M.S. "Blanche".

17th November.—Daylight reconnaissances were carried out by the R.A.F. over North-West Germany. In spite of heavy fire a naval base was photographed and other valuable information secured. All machines returned safely.

Mr. Hore-Belisha, Secretary of State for War, arrived at G.H.Q. France on a visit to the front.

According to a message from Helsinki fifteen Finnish steamers were, at this date, detained in German ports.

At a meeting of the Supreme War Council held in London joint action was arranged to make the best use in the common interest of the resources of both Great Britain and France; the fields covered comprised air, munitions and raw materials, oil, food, shipping and economic warfare.

The War Office announced that some 20,000 men were needed for the Home Defence battalions.

18th November.—The Dutch liner "Simon Bolivar" struck a German mine in the North Sea and sank with the loss of some eighty lives.

Severe methods of repression—arrests and executions—were employed by the Germans against the Czechs in Prague and elsewhere.

Whilst the prospect of a German invasion of Holland dwindled and the bulk of the German land and air forces remained inactive, sensational reports were circulated regarding dissensions between the Nazi Government and the General Staff of the Army. The discourteous reception by Germany of the joint peace appeal of Queen Wilhelmina and King Leopold caused little surprise outside the *Reich*. Unrest in the Czech protectorate, which could not be concealed, showed that Germany still had preoccupations which prevented her concentrating all her attention upon the West.

The meeting of the Supreme War Council, at which arrangements were concluded for the pooling of allied resources, was of the highest importance. It promised to achieve far more than the schemes formulated in the Spring of 1918 when the number of Allies whose interests and requirements had to be calculated, and the many theatres of war did so much to complicate the problem.

A change could now be discerned in the German methods of submarine warfare. Attacks upon merchant ships by torpedo and gunfire almost ceased and, in total defiance of the Hague convention, U-boats had begun to lay mines systematically in the shipping lanes off the East Coast of Britain, imperilling neutral and allied vessels in an equal degree.

The openly expressed German aim was to " blockade " Great Britain by scaring all neutral vessels from British ports.

19th November.—Four British, one French, one Italian, one Swedish, one Yugo-Slav and one Latvian ship were sunk, presumably by mine explosions.

A German message reported successful air reconnaissances of Scapa Flow, the South of England, and the North Coast of France.

20th November.—A German aeroplane was driven away from the lower reaches of the Thames by the R.A.F.; another enemy machine crossed the Sussex coast and reached the outskirts of London before being chased out to sea by our fighters. An air-raid alarm was sounded in East Kent.

The Admiralty announced that a German aeroplane made an unsuccessful attack upon a British destroyer.

A British steamer was reported sunk by enemy action in the Atlantic.

Further repressive measures were carried out by the Germans in the Czech protectorate and the Slovak frontier was reported to be closed.

A German aeroplane was shot down over Dutch territory.

21st November.—**A German " reconnaissance bomber " was shot down by the R.A.F. off Deal.**

H.M. cruiser " Belfast " was damaged by a torpedo or mine in the vicinity of May Island (Firth of Forth). Twenty casualties were reported.

The loss was announced of H.M. minesweeper " Mastiff," sunk by a German mine.

Three Fleetwood trawlers were reported sunk by enemy submarine action. The Japanese steamer " Terukuni Maru " sank off the East Coast after an explosion, presumably that of a German mine.

On the Western Front the French reported considerable air activity, two German fighters being brought down in flames.

Reports from Prague stated that martial law had been lifted on the previous night and that the city was quiet.

The Prime Minister announced in the House of Commons that, in retaliation for Germany's brutal methods at sea, **exports of German origin or ownership would be made subject to seizure on the high seas.**

Germany announced that among those arrested for the Munich bomb outrage were " two agents of the British Secret Service."

22nd November.—Unidentified aircraft seen over the East Coast and the Thames estuary were fired on by A.A. guns, and R.A.F. fighters went up to investigate. At night **one German aeroplane was shot down into the sea by A.A. fire** off the S.E. coast.

Enemy aircraft made an attack upon shipping in the Shetland area. They bombed and set on fire a R.A.F. seaplane which was lying at its moorings. No casualties were suffered by personnel.

The Admiralty announced that H.M. destroyer " Gipsy " had struck a mine off the East Coast and was subsequently beached. Three officers and ten ratings were injured and thirty ratings reported dead or missing.

The French reported two German submarines sunk by one of their destroyers in a period of three days.

Contraband goods intercepted during the week ended 18th November were stated to amount to 14,000 tons, and during the week the Contraband Committee considered 131 new cases of ships and 74 cases outstanding from the previous week. The vessels of ten different nationalities were involved; one cargo was wholly seized, and 114 cargoes were wholly released. Part cargoes were seized in twenty cases.

The French officially announced that they would pursue the same policy as Great Britain in seizing exports from Germany. Holland protested against the British decision.

The Germans acknowledged that they had initiated indiscriminate mine warfare at sea and attempted to justify this policy.

On the Western Front the R.A.F. and French air force had notable successes, **six German aircraft** being shot down; another fell to French A.A. fire. The French reported the loss of one aeroplane.

The German Chief of Police announced the names of the two " British agents " who were alleged to have been implicated in the Munich bomb explosion. They had been kidnapped from Dutch territory at Venloo on the 9th (*q.v.*).

23rd November.—**The armed merchant cruiser " Rawalpindi,"** on the Northern Patrol, was **engaged**, South-East of Iceland, **by the armoured ship " Deutschland,"** and another German warship. Maintaining the action until she was disabled and in flames, the British ship sank with most of her complement, which numbered more than 300.

The Admiralty announced that H.M. minesweeper "Aragonite" had been damaged by a mine and sunk. Four ratings were injured.

Further shipping losses by U-boat or mine between 19th and 22nd November were reported; they comprised three British and one Greek merchant vessel, a Fleetwood trawler, and a French trawler and a fishing boat. Later the loss was announced of another Fleetwood trawler, sunk by U-boat on this day, and of a British cargo steamer by a German mine. An unidentified steamer suffered a similar fate.

The R.A.F. accounted for seven German aircraft on the Western Front.

Observation seemed to establish the fact that the German sea-planes which had flown over the East Coast and Thames estuary had sown mines by dropping them with parachutes attached.

The Belgian Government decided to protest against the British policy of seizure of German exports.

The Rumanian Cabinet resigned in consequence of its inability to meet German trading demands.

24th November.—The French reported the sinking of a German U-boat by a survey vessel fitted as a submarine chaser.

M. Tatarescue, the new Rumanian Premier, completed his Cabinet. He was said to possess French sympathies.

25th November.—Successful reconnaissance flights were carried out by the R.A.F. on the night 24th–25th and the following day over North-West Germany, Wilhelmshaven and Heligoland being among the areas visited.

The Admiralty announced two bombing raids by German aircraft carried out in the afternoon against British warships in the North Sea. Many bombs were dropped but no casualties were suffered.

A message from Capetown reported the sinking in the South Atlantic of the German steamer "Adolph Woermann," her crew having scuttled her when she was intercepted by a British warship.

A German mine-patrol vessel (600 tons) struck two German mines in a minefield just south of the Little Belt and sank.

By this day protests against the British decision to take action against German exports had been received from Denmark, Holland, Belgium and Japan.

German mine-layers laid mines in Swedish territorial waters and news was received of the seizure by the Germans of two Finnish cargo vessels.

Indiscriminate mine warfare, aimed at the Allies and neutrals alike, threw an increased burden upon the allied navies. Losses from this new menace had to be accepted as inevitable, but no doubt existed that eventually it would be overcome. Steps were at once taken to augment the mine-sweeping services and to perfect methods of dealing with the magnetic mine which explodes without direct contact. The chief objectives were new minefields laid surreptitiously by German submarines; the parachute mines reported to have been laid by enemy seaplanes constituted a comparatively minor problem.

H.M.S. " Belfast " (10,000 tons) was the last new cruiser commissioned before the War, and had only been with the Home Fleet a few months.

The fight, against overwhelming odds, of the " Rawalpindi " (ex-P. & O. liner of 16,697 tons), manned by officers and ratings of the R.N.R., Royal Fleet Reserve, Naval Pensioners, and R.N.V.R., was a particularly gallant one. It was evident that Captain E. C. Kennedy, R.N., and his ship's company had no thought of surrender.

The allied decision to take action against German exports—mainly with the idea of depriving Germany of foreign exchange—was bound to result in protests from neutrals; but the same measure was taken in March 1915 and neutral difficulties were subsequently adjusted as far as circumstances permitted.

Another development was the institution of the " Navicert " system of contraband control whereby American exports to neutrals were to be examined by British authorities before shipment. This system would probably be extended to the ports of other neutral countries.

A brief interval of fine weather on the Western Front provided the occasion for many gratifying allied successes in the air. Many of the German machines shot down were engaged in low-flying reconnaissance.

Certain reports from Paris indicated that all preparations were completed for a great German offensive—perhaps from Holland to the upper Rhine—to start between 12th and 14th November. If so, more prudent counsels prevailed and with the advent of winter—snow had again fallen in some regions and the rivers were high—major operations on the Western Front were hardly to be contemplated. It was obvious, however, that the German policy was still to keep the Allies and neutrals in doubt as to whether an invasion of Holland, and perhaps Belgium was imminent. In his speech in the House of Commons on 22nd November

Mr. Hore-Belisha pointed out that whereas in this war the allied offensive front was limited to the extent of the Franco-German frontier (200 miles), in the last war the French and British had to defend 800 miles—from the Alps to the North Sea.

Shipping losses for the week ended 25th November were eleven British ships (total tonnage, 25,787), and four neutral ships (23,949 tons). In addition two French ships were lost (total tonnage approximately 3,000).

26th November.—Leningrad military area headquarters reported that artillery fire from Finnish territory had caused the Red Army thirteen casualties—four killed and nine wounded. A protest was made to the Finnish Government.

In his broadcast speech to Great Britain and the Empire the Prime Minister expressed his confidence in the ability of the Allies to overcome the latest phase of German mine warfare at sea. Our war aims he defined as the complete defeat of the enemy; our peace aims as the establishment of a new Europe in the sense that all nations would be free from fear of aggression.

The French and British Prime Ministers, it was announced, had appointed M. Jean Monnet to be the allied Chairman of the Anglo-French Co-ordinating Committee in connection with the pooling of allied economic resources for the prosecution of the War.

27th November.—At night the R.A.F. carried out a successful reconnaissance flight over North-West Germany.

The Admiralty announced the capture of two German merchantmen, one of which was attacked by a U-boat, abandoned, and driven ashore.

A German patrol vessel struck a mine in the German minefield off the island of Langeland.

A Russian demand that the Finnish troops should withdraw from the vicinity of the frontier was refused by the Finns unless the Soviet troops did likewise. The Finnish Government asserted that there had been no artillery fire from their troops on 26th November, and alleged that the Russians had been observed at mortar practice.

Sweden protested to Germany against the laying of mines up to a three-mile limit at the southern entrance to the Sound. (Combined with a storm and low water, the effect had been practically to close the southern entrance to the Baltic on the previous day).

28th November.—In the afternoon an R.A.F. fighter patrol which had been sent out in search of enemy mine-laying seaplanes reconnoitred their base at Borkum and located several seaplanes which were attacked by machine-gun fire. The fighters replied to heavy A.A. fire, and eventually returned without casualty. From later reports it was believed that **two German seaplanes had been seriously damaged, several machine-gun posts on Borkum Mole put out of action, and certain patrol boats "riddled with bullets."**

The French announced the capture of two German merchant ships.

Russia announced that Finland's attitude—constituting a direct threat to Leningrad—nullified the non-aggression pact between the two countries. Tension increased, following allegations from Leningrad of further acts of aggression by Finnish frontier troops.

The Order in Council was published implementing the policy of **seizure of German exports, to take effect from 4th December.**

The South African Government made public further details of the Nazi plot for an insurrection on a large scale, in which members of the German Embassy staff were involved.

29th November.—A R.A.F. fighter intercepted and engaged a German aeroplane approaching the North-East Coast. The enemy machine was believed to have been destroyed. Later the Air Ministry reported a German aeroplane overtaken and shot down by two British machines over the North Sea. Other German aircraft were reported over South-East Scotland.

Reports were received of the **wreck of two German seaplanes**—one by the Faroe Islands and one off the South Coast of Norway.

Four German flying boats, "partially damaged," were forced down by bad weather in the North Sea. Their crews were saved. News was received of the loss of two British merchantmen, one by mine explosion.

The amount of **goods intercepted by the British Contraband Control** during the week ended 25th November was announced to be about **21,500 tons,** making **463,000 tons** (including over 100,000 tons of petroleum products) **in the first twelve weeks of the war.**

M. Molotoff, in a broadcast speech from Moscow, announced that Soviet Russia had severed diplomatic relations with Finland, whose intransigeant attitude he blamed for the breach. " Soviet Russia's sole desire was to safeguard her integrity and assure the safety from attack of Leningrad."

The Eire Government decided to establish " a small Marine service " (motor torpedo boats and armed trawlers) in the interests of national defence.

30th November.—The Admiralty announced that a new minefield had been laid in the North Sea, covering 300 square miles, about midway between the Thames estuary and the Schelde.

The French announced a successful attack upon a German submarine.

About 9 a.m. **Russia attacked Finland** by bombing from the air Helsinki, Viborg and other towns. Three raids were made upon Helsinki and casualties amounted to about 200, including many civilians. High explosive and incendiary bombs were dropped, also propaganda leaflets. The Finnish Government reported invasion on the Karelian isthmus, North of Lake Lagoda, and North of Kola ; also the occupation by Russian troops of an island in the Gulf of Finland.

The French Chamber of Deputies approved the proposal for M. Daladier to rule by decree for the duration of the War.

1st December.—**A Royal Proclamation called up for service men of the 20-22 years group** (dating 1st December). They were to register on the 9th December, and the intake was expected to total nearly 250,000.

Fighting continued in Finland where the Russians made little progress on the Karelian isthmus and were reported to have sustained losses in tanks and aircraft. Helsinki was again bombed from the air, as were many other towns. Hangö was attacked unsuccessfully from the sea and the air, but the Russians occupied Petsamo, the Finnish port on the Arctic, following a naval bombardment.

A new Finnish Government, reconstructed on a broader basis with M. Ryti as Premier, was reported to be ready to re-open negotiations with Russia, but would not consider surrender of its independence. At the same time a puppet Finnish " People's Government," was set up by Soviet Russia at Terijoki within the Finnish frontier on the Karelian isthmus.

2nd December.—The crew of a German liner which had left Mozambique (Portuguese East Africa) scuttled the ship when she was intercepted off the Cape of Good Hope by machines of the South African Air Force.

During the week ending on this day seven British ships (tonnage 25,765), one French ship (tonnage 4,374) and six neutral ships (tonnage 30,932) were sunk by German mine or submarine. **The tonnage lost during November was only a third of that lost during the first month of the war.**

In Finland the Russians made little progress, and **the Finns** were reported to have **recaptured the Arctic port of Petsamo,** severe fighting having taken place in the North. Hangö and other towns were again bombed from the air, but all was quiet in Helsinki.

The new Finnish Cabinet decided to appeal to the League of Nations. Russia formally recognized the Comintern " puppet " government set up at Terijoki.

Although bad weather had restricted air and sea operations the R.A.F. carried out their twenty-seventh reconnaissance over Germany. The Borkum raid was the first exploit of our long-distance fighters, whose objectives would undoubtedly have suffered more damage had they been attacked with bombs instead of machine-guns. The German persistence in attempting to reconnoitre Scotland and the Shetlands area appeared to presage serious air attacks upon our naval bases when conditions should be favourable.

Neutral and allied ships, in decreasing numbers, were victims of German mines. German propaganda, designed to intimidate neutral shipping, appeared to have little effect ; it was announced that Dutch sailings would continue as usual. The uneasy and difficult situation of the neutrals of Northern Europe was fully appreciated by the Allies who had set themselves to operate the two-way blockade of Germany with as little damage as possible to other countries.

The Polish government in France announced that authentic evidence was available regarding the ruthless methods employed by the enemy in accomplishing the " Germanization " of Poland.

No doubt Soviet Russia had hoped to obtain, without resorting to hostilities, all she demanded from Finland ; but in this she failed owing to the resolute attitude of the Finnish government. The sudden invasion—an act of wanton aggression as inexcusable as any committed by Nazi Germany—was almost universally condemned. The U.S.S.R. seemed to be aiming at complete domination of the Baltic ; the

Scandinavian nations had good reason to be apprehensive, and the situation appeared to call for their close co-operation to establish a united front in support of Finland, instead of clinging to a formal neutrality with the prospect of being devoured piecemeal.

3rd December.—**R.A.F. bombers made a surprise raid on Heligoland** and secured several direct hits, including one on a German cruiser. One enemy aeroplane was shot down, and all our bombers returned safely. Photographs were taken.

A coastal reconnaissance machine of the R.A.F. on patrol over the North Sea **bombed and sank a U-boat,** which was surprised on the surface.

The Finnish Government approached Russia through the Swedish Government, inquiring if peace negotiations could be opened. A meeting of the Council of the League of Nations was called for 9th December in consequence of Finland's appeal. Russia concluded a treaty with the " puppet " Government at Terijoki, whereby she was to secure the concessions she had previously demanded.

4th December.—The Admiralty announced that a Blue Star liner, on her way from New Zealand had been attacked by a German raider in the South Atlantic, and that her loss was presumed.

A German guardship was reported sunk near the German minefield South of Langeland Island, Denmark.

H.M. the King landed in France on a visit to the British Expeditionary Force.

M. Molotoff was reported to have replied to the League of Nations, asserting that Russia was not at war with Finland and that the decision to call a meeting was an " offensive demonstration " against the Soviet. The message added that the Helsinki Government did not speak for the true representatives of the Finnish people.

5th December.—The Ministry of Economic Warfare announced that the **" Navicert " system,** whereby neutral exporters notify the British authorities in advance of their shipments, would be extended to Brazil, Argentine and Uruguay.

An official announcement was made that the British output of munitions had been doubled in the last six months.

Canada opened recruitment for her Air Force to citizens of the United States.

The territorial waters of the Aland islands were mined by the Finns.

President Roosevelt announced that, as a token of American sympathy, the latest Finnish debt payment would be returned by the U.S.A. ; also that it might be possible to return to Finland some of the money she had previously paid.

6th December.—Units of the R.A.F. Coastal Command engaged enemy seaplanes on several occasions whilst on patrol over the North Sea. Two of the German aircraft appeared to sustain serious damage. One R.A.F. machine did not return.

A German liner whose last port of call was Bahia Blanca was reported captured by British warships in the South Atlantic.

The total amount of contraband seized by the Allied Control since the beginning of the War was now reckoned at **735,000 tons ;** 476,500 detained by Great Britain, and 260,000 tons by France. In the last week the British total had amounted to 13,700 tons.

In the House of Commons Mr. Churchill, First Lord of the Admiralty, announced that the anti-submarine forces were being steadily augmented, and that from **two to four U-boats were destroyed every week ;** more than 1,000 of our merchantmen had already been fitted with defensive armament ; the convoy system was working well ; magnetic mines were being dealt with by methods which underwent constant improvement ; **our net loss in merchant shipping** since the War began amounted to only **60,000 tons** ; we had building nearly 1,000,000 tons of warships of all classes.

7th December.—R.A.F. fighters had encounters with German machines, driving away two from the North-East coast and eight from the Firth of Forth area. Five of the German craft were seen to be hit.

H.M.S. " Jersey " was damaged by a torpedo fired by a **German submarine.** Two officers and eight ratings were reported missing and twelve ratings injured. It was believed, but not confirmed, that the U-boat was afterwards destroyed.

The War Office opened a register of horse-owners and horse-dealers with a view to acquiring cavalry and light-draught animals as needed.

The Finnish Foreign Office in a special announcement appealed to the nations of the World for help against Russia.

8th December.—**The R.A.F. Coastal Command attacked and sank two German submarines.**

Finnish reports spoke of fighting on the Petsamo and heavy Russian losses ; the Finnish fleet and coastal batteries were said to have engaged Russian warships off Helsinki. The Russian blockade of the Finnish coast from the Gulf of Bothnia down to Hangö, which was announced to come into operation at noon, was not recognized by the U.S.A.

9th December.—The capture of a German steamer by a British warship was announced.

The Germans carried out an extensive air reconnaissance over Eastern France during the night 8th/9th.

The raid on Heligoland carried out by the R.A.F. effected a surprise and was pressed well home ; as usual in operations of this nature the damage inflicted could not be ascertained with any exactitude.

The losses of allied and neutral shipping by German mine and torpedo were no heavier than were to be expected ; and the operations against enemy submarines yielded gratifying results. It was acknowledged that in addition to the armoured ships " Deutschland " and " Admiral Scheer " a German cruiser might be at large, but if so the depredations of these raiders were hardly noticeable. It was reported, but not verified, that the " Deutschland " had succeeded in regaining a German port.

Germany appeared to be singling out Dutch ships for destruction and the Low Countries were still under the threat of invasion.

Russia had made little progress against the Finnish resistance but was expected to redouble her efforts.

The attitude of Italy and Japan—now neutrals, jealous of their interests, and not allies as in 1915—had to be taken into account by the Allies in prosecuting the interception of German exports.

10th December.—Russia formally protested against the British blockade of German exports.

It was revealed that **part of the B.E.F. had taken over a sector on the Franco-German frontier** some days previously and was thus in direct contact with the enemy. **The King returned from France** where he had been visiting the B.E.F.

On the Karelian isthmus the Russians appeared to have penetrated about 36 miles, but the Finns reported a successful action at Taipale on the western shore of Lake Ladoga. The Russians were alleged to have used gas again. Farther North they

were said to be advancing on a broad front and at some points were 24 miles inside the frontier. Heavy fighting continued in the Petsamo region.

The Finnish Parliament appealed for the active help " of all civilized nations " against the Russians.

Germany officially denied that she had ever supplied the Finns with war material.

11th December.—Fierce fighting was again reported in Finland, Russian attacks failing against Taipale. Farther North the Finns admitted withdrawal from two villages but claimed that heavy losses had been inflicted on the Russians. Some of the Finnish coastal batteries were active. The Russians claimed to have " advanced in all directions."

Russia refused the offer of the services of the International Red Cross Committee in Geneva on the grounds that she was not at war with Finland.

The Council of the League of Nations Assembly called upon Russia to cease hostilities and negotiate, giving her 24 hours in which to reply.

12th December.—**The German liner " Bremen "** was reported to have **arrived in a German port** from Murmansk after having been sighted during her passage by a British submarine which was within torpedo range.

An aircraft belonging to the Fleet Air Arm fouled a balloon barrage cable near Southampton and crashed with the loss of all her crew.

Air Chief-Marshal Sir Cyril Newall, Chief of the Air Staff, began a detailed inspection of R.A.F. units on the Western Front.

Reviewing the achievements of the R.A.F. Sir Kingsley Wood, Secretary of State for Air, stated in the House of Commons that the component parts of the anti-aircraft defence of Great Britain had been " successfully welded into an efficient and adaptable system " under a single command ; the R.A.F. had proved itself superior to the enemy both as regards pilots and aircraft ; convoy work and anti-submarine operations (57 attacks had been made on U-boats) had been successful in the extreme ; the Bomber command had shown its prowess in the successful raid on Heligoland. Also, personnel for complete squadrons of the R.A.F. had been, or was being supplied by Canada, Australia, New Zealand, and South Rhodesia, and certain Polish squadrons

were being reformed in this country for attachment to the R.A.F. Aircraft production had been more than doubled within the year and newer and more powerful types were being taken into service.

Successful resistance was maintained by the Finns on the Karelian isthmus, but North of Lake Ladoga, the Russians made progress. Their advance across the "waist-line" of Finland towards Oulu and the Gulf of Bothnia had covered nearly half the distance, according to their own reports. The invaders were also attacking North-East of Tornio (at the head of the Gulf of Bothnia) towards the "Arctic Highway" leading to Petsamo which appeared to be still in Finnish possession. The Finnish part of the Rybachi peninsula, however, was in Russian occupation.

Russia's reply to the League of Nations note consisted of a polite refusal to negotiate, referring to the note of the 4th December, wherein Russia maintained that she was not at war with Finland.

Evidence was received that Germany was holding up war material sent from other countries for Finland.

13th December.—During the night of the 12th/13th, R.A.F. Security Patrols were maintained over the German mine-laying seaplane bases in the Heligoland Bight. The operations were successfully performed in spite of heavy anti-aircraft fire.

The British cruisers "Exeter," "Ajax" and "Achilles" engaged the 10,000 ton armoured ship "Admiral Graf Spee" off the River Plate about 6 a.m. After a long running fight, the German ship, pursued by the "Ajax" and "Achilles," took refuge in Monte Video. The "Exeter," having borne the brunt of the first encounter, was forced to drop out of the action. British casualties amounted to: "Exeter," 84; "Ajax," 12; "Achilles," 7. The German losses were reported to be 96.

The Admiralty decided to withdraw from the Yangtze patrol three gunboats in addition to the five withdrawn in October, the officers and men being needed "for important service elsewhere."

During the week ended 9th December the **British Contraband Control intercepted 7,000 tons of goods** suspected of being destined for Germany. In the first fourteen weeks of the war the total amounted to 483,500 tons.

In secret session, which lasted seven hours and a half, the House of Commons debated the organization of supplies for the prosecution of the war.

The Finns claimed the recapture of Salla, on the northern front, where the Russian objective was Kemijärvi at the head of the railway from Tornio on the Gulf of Bothnia. Conflicting reports were received of fighting South of this sector, and another Finnish success was claimed on the northern side of Lake Ladoga.

14th December.—In the course of a wide reconnaissance carried out over the North Sea and the estuaries and fortified islands of North-West Germany by considerable forces of the **R.A.F.,** one formation **engaged strong enemy fighter forces in the Heligoland Bight.** Four (perhaps five) Messerschmidt fighters and three British aircraft were shot down.

H.M. submarine "Ursula" torpedoed and sank a cruiser of the "Köln" class off the mouth of the Elbe. The cruiser was accompanied by six destroyers.

The Admiralty announced **the loss of H.M. destroyer "Duchess,"** sunk after collision with another British warship. There were only 23 survivors out of a complement of 145.

The Finns brought to a successful conclusion a fierce three-day counter offensive near Tolvajärvi, North of Lake Ladoga, when heavy losses were inflicted on the Russians. In the Petsamo corridor, however, the Finns were forced southward and the nickel works at and near Salmijärvi (close to the Norwegian frontier) were blown up as the withdrawal proceeded.

The Council of the League of Nations expelled Russia from the Council and from membership of the League in consequence of her unprovoked attack upon Finland.

15th December.—Aircraft of the R.A.F. patrolled the German bases of Borkum, Nordeney and Sylt during the night 14th/15th. German seaplanes observed at moorings were attacked with bombs.

One German merchant ship was reported captured, and another scuttled on interception by a British warship.

The Finns reported the **sinking of a Russian destroyer by the coastal batteries at Turku.** On the Karelian isthmus the Russians were again repulsed; they were driven back North of Lake Ladoga; and Suomussalmi in the "waist-line" of Finland, was recaptured from them. A Russian communique announced the entry of Soviet troops into Salmijärvi, in the nickel-mining region. The weather was unfavourable for air operations.

The Finnish Government, by radio, asked the Russian Government if it would suspend hostilities and negotiate.

16th December.—Another German merchant ship was reported to have been scuttled on the approach of British patrol vessels.

During the week which ended on this day the **French Navy intercepted 74,000 tons of suspected contraband,** carried in 19 vessels.

Further details were made known of the Russian losses during the fighting on the Karelian isthmus. Finnish troops, advancing from the southern end of the Arctic Highway, were said to have retaken Kuvlajärvi.

In his speech to the Chamber of Fascios and Corporations, Count Ciano revealed that Italy had tried repeatedly and failed to exercise a moderating influence on Germany, before the German attack on Poland; he stated that Italy had received only 48 hours notice of the conclusion of the Soviet-German pact. She was not working for the creation of a Balkan *bloc*.

The patrol of the enemy seaplane bases in the Heligoland Bight by the R.A.F. had by now become a routine measure. It was expected that it would check the German mine-laying activities by aircraft and was bound to lead to more frequent engagements in the air. The R.A.F. bombers employed showed that they were quite capable of dealing with the German fighters.

The brilliant naval action off the River Plate, whereby the German armoured ship " Admiral Graf Spee " was forced to take refuge in Monte Video, was a triumph of British seamanship, tactics, and gunnery. The German ship was more heavily armoured, and had the advantage of weight of metal (11-in. guns against " Exeter's " 8-in. and the 6-in. of the two smaller cruisers), but was out-fought and out-manoeuvred. The effect of this action was comparable to that of the battle of the Falklands in the last war, in that it ended a serious menace to our shipping in distant seas. The " Graf Spee " had already sunk nine British merchantmen.

Another fine feat was that of H.M. submarine " Ursula " in torpedoing a cruiser escorted by six destroyers in enemy waters, and subsequently evading intensive anti-submarine attacks.

The action of the commander of the submarine " Salmon " in letting the " Bremen " go without attacking her was entirely correct: he was prohibited by International Law from torpedoing her without warning, and enemy aircraft which were in the vicinity made it impracticable for him to take legitimate surface action. It was a consolation to us that in avoiding the piratical methods of the German navy, a valuable ship remained afloat to fly the Red Ensign at the end of the War.

As a set-off against the continued loss of allied and neutral merchant vessels from enemy mine and torpedo, the number of German ships captured, or sunk to avoid capture, rose to 39, or 4 per cent. of the whole German mercantile marine. Most of the remainder still lay idle in neutral ports.

Russia, it was evident, had under-estimated the resisting powers of the Finns; moreover the Soviet troops suffered severely from clumsy tactics, which further dispirited them in an unpopular war. Nevertheless, winter, the Finns' great ally, was rather late in the Baltic, and the Russian command expected to employ still greater forces in order to prevail by sheer weight of numbers and equipment.

Count Ciano's speech was by no means friendly to the Allies and he made no reference to the Russo-Finnish war; but he revealed how little Germany had valued the friendship, counsel, and assistance of Italy.

17th December.—The R.A.F. raided the German islands of Nordeney and Sylt on the night 16th/17th December.

The "Admiral Graf Spee" left Monte Video, but before she could be brought to action by H.M. ships "Ajax," "Achilles," and "Cumberland"—waiting to intercept her—she **was sunk by her own crew** in the fairway of the estuary. It appeared that this action was taken at the express order of Hitler. The official German explanation was that as the Government of Uruguay had refused to grant the time necessary for repairs, the Captain decided to scuttle the ship "outside Uruguayan territorial waters."

Two German aeroplanes machine-gunned, and then bombed and sank a small British motor vessel off the East coast. R.A.F. machines drove off the enemy raiders, one of which was believed to have been destroyed. Numerous other vessels, chiefly fishing trawlers, were attacked by the Germans in the same way and some damage and loss of life was inflicted.

The first contingent of Canadian troops arrived in England without mishap and proceeded to its training centre.

The formal agreement governing the Empire Air Training Scheme was signed in Ottawa.

Finland reported that all Russian attacks on the Karelian isthmus and North of Lake Ladoga had been repulsed with heavy loss; further North a Finnish advance had made progress, with heavy fighting. The Russians claimed advances to points nearly 50 miles South of Petsamo, and further progress across the "waist-line" of Finland.

18th December.—A bomber formation of the R.A.F., reconnoitring the Heligoland Bight area with orders to attack any enemy warships discovered at sea, encountered strong fighter forces of German aircraft. A fierce engagement followed, more than **twelve German machines were shot down. Seven of our bombers did not return.**

The Admiralty announced the return from patrol of **H.M. submarine "Salmon,"** who in the course of her cruise had sighted the liner "Bremen." Before doing so she had **destroyed a German submarine**, and she subsequently attacked a German squadron consisting of two battleships and three cruisers. **It was believed that she torpedoed the light cruiser "Leipzig" and the heavy cruiser "Blücher,"** but could not ascertain the amount of damage inflicted.

News was received of the scuttling of a German vessel (last month) in the North Atlantic whilst being pursued by a British warship.

Reports from South America showed that no loss of life attended the sinking of the "Graf Spee." Her officers and ratings, to the number of over a thousand, were on their way, in Argentinian tugs and barges, to Buenos Aires, where they would be interned.

The Russians appeared to have occupied most of the Finnish territory adjoining Norway, pushing South rapidly from the Arctic coast; further South, however, on the front extending to Lake Ladoga, the success of the Finns continued; and a fresh attack of the Russians on the Karelian isthmus was said to have been repulsed with heavy loss. A partial thaw had made weather conditions worse.

19th December.—The North-German Lloyd liner "Columbus" was set on fire and abandoned by her crew some 400 miles North of Bermuda, rather than become the prize of a British warship.

The French navy reported the destruction of two German submarines.

The Prime Minister concluded his visit to France, attending a meeting of the Supreme War Council in Paris before leaving by air.

20th December.—Captain Hans Langsdorff, Captain of the "Graf Spee" committed suicide at Buenos Aires during the night 19th/20th December.

The Russians launched strong attacks on the Karelian isthmus but they met with no success. Considerable losses were sustained in men, and much war material was lost to the Finns. Heavy fighting took place in the air, the Finns claiming fourteen enemy aircraft brought down. The Russian drive from the North-Eastward towards the Gulf of Bothnia appeared to have spent itself, for the Finns reported that they were advancing in this region. Russian air-raids extended as far as Vaasa, capital of East Bothnia, but had little effect.

21st December.—It was stated that up to date the **Allied Contraband Control had detained 870,000 tons of goods** suspected of being intended for Germany. Of this quantity approximately 510,000 tons had been intercepted by the British Contraband Control.

Continued success attended the efforts of the Finnish counter-attacks against the Russians who threatened the " waist-line " of Finland from the North-East (Kemijärvi region). On the Karelian isthmus all Russian attacks were repulsed. Violent snowstorms in the far North prevented action.

22nd December.—On the Western Front a R.A.F. fighter patrol of three machines was engaged by eight enemy fighters. Two of the British and one, perhaps two, of the Germans were shot down.

In his speech to the French Chamber of Deputies M. Daladier referred to the extension of the Maginot Line on the northern frontier and in the Jura and to further developments in prospect. He stated that France's losses in killed, up-to-date, totalled 1,136 in the Army, 256 in the Navy, and 42 in the Air Force.

The Finns counter-attacked along a 12-mile front from the Mannerheim Line on the Karelian isthmus and were everywhere successful. At the northern end of the isthmus, on the Taipale river, Russian attacks were repulsed with loss, and the battle in the Aglajärvi region ended in a Russian defeat. Farther North, on the Salla front, the Finns also reported progress and the Russians withdrew hurriedly from the South towards Petsamo. Helsinki was bombed again from the air without much effect; Finnish airmen bombed Terijoki, the seat of the " puppet " Government.

23rd December.—The Admiralty announced their intention to lay mines in the three new areas in the North Sea, off the East coasts of England and Scotland.

The Finns reported a notable victory North of Lake Ladoga, where the Russians, pressed back from Tolvajärvi, were said to

be within 18 miles of their own frontier ; North-West of Salla the Finns regained important positions. Moscow admitted the " slowness of the Russian advance " although deep thrusts into Finnish territory were claimed ; also the Mannerheim Line, " which had been breached in several places," was said to be as strong as the Siegfried Line.

The action over the Heligoland Bight on the 18th December was the biggest engagement which the R.A.F. had fought ; though greatly outnumbered, the Wellington bomber proved more than a match for the latest type of German fighter. It was safe to presume that the routine patrols maintained over the enemy seaplane bases were fulfilling their object. Balloon barrages established in our river estuaries also appeared to be a useful measure in checking the laying of mines by seaplanes.

The scuttling of the " Admiral Graf Spee " and the suicide of her Captain lowered the prestige of the German navy throughout the world, and despite official apologia, exerted a depressing effect on the German fighting Services. The Germans admitted that the cruiser "Blücher" had been damaged by the attack of H.M.S. " Salmon " ; and although ten British and foreign merchant vessels had been lost by enemy action during the week ended 16th December, this was but a small proportion of the 1,100 ships (total tonnage 3,000,000) which had entered or cleared from British ports during the period. Apart from the use of mine and torpedo, German action had been confined chiefly to attacking defenceless fishing vessels from the air. Thirty-five craft—only three of them naval units—were thus attacked during the first three days of the week, and one coasting vessel and six trawlers were sunk. The efficiency of allied contraband control continued to improve ; and during November British exports had risen by 50 per cent. as compared with October.

By the end of the week the failure of the Russian invasion of Finland could hardly be explained away by Moscow. Greatly superior numbers and material had not prevailed against a defence conducted with outstanding tactical ability. It was evident that the Russians had been gravely handicapped by the poor spirit of many of their troops, the climate, and their precarious communications in the eastern and northern sectors.

24th December.—Both the Finns and the Russians announced considerable air activity over the various battlefronts, but in general the fighting died down.

25th December.—H.M. The King broadcast a message to the peoples of the Empire.

A R.A.F. patrol covering fishing vessels in the North Sea became engaged with German patrol vessels but no damage appeared to have been suffered on either side.

Finnish troops were said to have carried their advance into Russian territory.

26th December.—**A squadron of the Royal Australian Air Force,** consisting of completely trained personnel, **disembarked in England** for active service with the Coastal Command.

The Russians attacked again on the Karelian isthmus and were repulsed with loss. The bombardment of Viborg by long-range artillery—believed to be situated in front of the Mannerheim Line over 20 miles away—had begun on Christmas Eve and reached some intensity on this day.

In response to the Secretary-General's enquiry as to what Members of the League of Nations were prepared to do to help Finland, South Africa announced that she was releasing for Finland aircraft which had been ear-marked for the defence of the Union. Replies of goodwill were received from many South American states and countries.

27th December.—**Indian troops disembarked in France** on their way to join the British Expeditionary Force.

Reports from Finland indicated that the Finns were forty miles inside Soviet territory; their patrols were even said to have penetrated to Kandalaksk Bay, an arm of the White Sea. A Finnish attack had been repulsed by the Russians thirty miles South of Salmijärvi, in the Petsamo region. Russian aircraft were generally active.

The provision of monetary assistance for the Finns was announced in France (Paris), Norway, Iceland, and Switzerland, and the Finnish Mission in the U.S.A. opened negotiations for the purchase of up-to-date war material. Detachments of Swedish volunteers left Stockholm for Finland.

28th December.—**A British battleship was attacked and slightly damaged by a German submarine.**

Finnish troops were said to be still advancing in Russian territory North-East of Lake Ladoga, and East and North-East of Lieksa. Kotka, seventy miles from Helsinki, was heavily bombed by Russian aircraft. The Russians were still active on the Karelian isthmus but made no progress.

29th December.—The British battleship which had been hit by a torpedo reached harbour under her own power. Casualties amounted to four missing, presumed dead, and one seriously injured.

A German submarine, having missed the British steamer "Uskmouth" with torpedoes, shelled the crew as they were taking to the boats. It was believed that a French warship, answering an S.O.S. call, afterwards sank the submarine.

Finnish reports spoke of revolt amongst the Soviet troops near Salla, and it was claimed that the Leningrad—Murmansk railway had been cut by Finnish raiders. A new Russian thrust against Kemijärvi (at the southern end of the Arctic Highway) was anticipated. In the Petsamo region the snow had brought operations to a standstill. Russian aeroplanes continued to bomb Hangö and many open towns.

30th December.—The Finns reported the repulse of Russian attacks at Lake Suvanto (Karelian isthmus) and heavy fighting at other points farther North on the Karelian front.

M. Ryti, the Prime Minister of Finland, appealed to "the warring Western Powers" to join in warding off the common danger of Bolshevism.

Christmas week, with most of Europe in the grip of severe winter weather, was devoid of major incident. Few ships were lost by German mine or torpedo. The new British minefield off the East Coast, which left a lane of navigation inside, extended from Moray Firth to the Thames Estuary, the two places of entry and exit for British and neutral shipping.

The British battleship damaged by a German torpedo was said by an official German communique to be one of the "Queen Elizabeth" class and the scene of the submarine attack was given as "off the West coast of Scotland."

On the eve of the New Year Hitler made a characteristic announcement in which he said that Germany's purpose was to "free Europe from British tyranny." Admiral Raeder, Marshal Goering and General von Brauchitsch each indulged in boasts and threats, chiefly directed against Great Britain.

Germany's attitude to the Scandinavian nations became more hectoring, indicative of a policy which aimed at anticipating Russia in seizing some of the Baltic spoils when the opportunity should be ripe.

The Russian failure against Finland, however, had become more and more obvious, Finnish official estimates putting the losses, from all causes of the Soviet troops as high as 100,000; and 250 tanks and 150 aeroplanes were said to have been captured or destroyed. The Finns reported their own losses to be 8,000.

31st December.—It was announced that the **second contingent of Canadian troops** had **disembarked in England,** having been convoyed safely, despite enemy threats, by British and French warships.

Uruguay ordered the German steamer " Tacoma " to leave Monte Video or to be interned.

The Finnish Northern Army announced a victory near Lake Kianta in the " waist-line " section of the front, after operations lasting nearly a fortnight ; a whole Russian division was said to have been routed and much booty, including 25 field-guns, captured.

1940

1st January.—Three machines of the Coastal Command encountered two Germans about 130 miles off the East coast of Scotland, and in the ensuing combat one of the enemy was shot down.

Bulgaria, Greece, Rumania and Turkey were added to the list of consignee countries for which the " Navicert " system is available.

Since the beginning of the war the value of goods consigned to Germany seized by the contraband control at Marseilles was reckoned at £1,400,000. In addition about £225,000 in gold and foreign currency had been taken from enemy subjects brought ashore for internment.

The German steamer " Tacoma " was interned at Monte Video by the Uruguayan Government.

In Finland the Russian attacks against the Mannerheim Line were suspended, apart from lively local encounters, but violent artillery fire was maintained.

The King signed a Proclamation that all in the age groups 19-27 were liable to be called up for service.

2nd January.—Three R.A.F. bombers gave battle to twelve German fighters over the North Sea near the German coast. Only one of the R.A.F. machines returned, but the enemy were reckoned to have lost three.

The Admiralty decided to lay up two of the remaining three gunboats on the Upper Yangtze river.

The Russian attacks on the Mannerheim Line were suspended owing to a fierce blizzard, the weather now being generally unfavourable for further operations.

Heavy bombing of Finnish ports, notably Turku, Vaasa, and Oulu, was reported.

Details were received of the Finnish victory at Tolvajärvi—Aglajärvi (50-60 miles North of Lake Ladoga) where a whole Russian division was virtually destroyed and much booty taken during the week preceding Christmas.

3rd January.—After an engagement with three enemy fighters an R.A.F. reconnaissance machine was forced down in Belgian territory.

Finnish aeroplanes were reported to be raiding the Russian bases in Karelia and in the Petsamo region. They also dropped 3,000,000 propaganda pamphlets on Leningrad. The Russians raided the ports in Southern Finland again, and bombed the railway near the Swedish frontier for the first time. On the Karelian isthmus the Soviet troops were said to be consolidating their positions in front of the Mannerheim Line.

Food riots were rumoured to have broken out in Leningrad and in Moscow.

4th January.—Aircraft of the R.A.F. carried out reconnaissance flights over North-West Germany and patrols over German seaplane bases in the Heligoland Bight on the night 4th/5th January; all returned safely.

Field-Marshal Goering assumed supreme control of all German industries serving the war and all Government Departments concerned with war economy.

Reports from Helsinki indicated that a Russian battalion sent to make contact with the forces defeated at Tolvajärvi had been cut off by the Finns who had severed the Russian communications. The operations on the Karelian isthmus began to assume the character of trench warfare, but the Russians attacked across the ice on Lake Ladoga and were repulsed.

5th January.—The following changes in the Cabinet were announced: Mr. Oliver Stanley to be Secretary of State for War, replacing Mr. Hore-Belisha; Sir John Reith to be Minister of Information, replacing Lord Macmillan; Sir Andrew Duncan to be President of the Board of Trade, replacing Mr. Oliver Stanley.

The Union of South Africa joined in the blockade of German exports and imports.

Indian troops arrived in the British zone on the Western Front.

There were indications that the Russians intended to turn the Mannerheim position by attacking over the thick ice on Lake Ladoga and in the Gulf of Finland. On all fronts except the Arctic, where the intense cold prevented anything but patrol action, Soviet troops were reported to be engaged in offensive preparations. Fierce fighting appeared to be going on in the Salla sector. Russian aeroplanes raided the Viborg district.

It was reported in London that Great Britain was supplying Finland with articles of clothing and equipment originally intended for the British Army; also that arms and munitions were being supplied to Sweden.

6th January.—On the night of the 5th/6th the R.A.F. carried out a successful reconnaissance flight over North-Western Germany.

A second contingent of Indian troops landed in France on its way to join the B.E.F.

Six Russian aeroplanes were reported to have been shot down whilst raiding towns some sixty miles North-East of Helsinki. Finnish patrols were again said to have penetrated to Kandalaksk (on an arm of the White Sea). The Finns claimed additional booty taken from the Russians retreating from the Lake Kianta region.

The changes in the Cabinet—particularly the departure of Mr. Hore-Belisha from the War Office—gave rise to much stupid speculation and uninformed criticism in a large section of the Press; but no change of the Government's policy was in question.

The latest National Service proclamation, which was calculated to affect some 2,000,000 men, covered the man-power requirements of all Services for the year 1940. None of these age-groups were to register until further notice, much less report for enlistment.

In Germany the appointment of Marshal Goering to control the nation's industrial and economic war effort seemed to foreshadow the introduction of more drastic measures, probably deemed necessary by the effect of the allied blockade.

During the first seventeen weeks of the War the British Contraband Control intercepted 537,600 tons of goods. The release of neutral vessels from the control bases had been much speeded up by the beginning of 1940, and the "navicert" system was being used by more and more neutral shippers.

A comparative analysis of naval casualties for 1939 showed that Germany had lost a much greater percentage of her strength than had

Great Britain. As regards merchant shipping, Germany had lost 5 per cent. and Great Britain 2 per cent. of her total tonnage.

The " Tacoma " was interned by the Uruguayan Government on the grounds that she had been actively assisting a belligerent warship, i.e., the " Admiral Graf Spee."

In Finland it became more and more apparent that Russia had sustained very heavy losses without achieving anything of importance. It was to be expected that she would intensify her military effort ; the concentration of large numbers of Siberian and Circassian troops, well trained in winter warfare, was reported to be in progress. On the other hand, the Finns were beginning to receive assistance in money and war-material, Great Britain and France making their contribution although its precise nature was not divulged. Scandinavian volunteers were taking the field.

7th January.—The Russians began to attack again in the Salla district, but operations were hampered by the severe cold. Moscow admitted patrol encounters on the Murmansk railway, 50 miles inside the frontier.

8th January.—General Sir Edmund Ironside, Chief of the Imperial General Staff, and General Lord Gort, Commander-in-Chief of the B.E.F., were decorated by General Gamelin with the Grand Cross of the Legion of Honour.

News was received of another Finnish victory, a whole division of Soviet troops being overwhelmed between Lake Kianta and the Russian frontier. More than 1,000 prisoners were taken and over 100 guns. The Russians were also reported to have suffered reverses farther North, in the Salla and Petsamo regions.

The Germans admitted that war material sent by Italy for Finland was held up in their Baltic ports, as " even indirect support of Finland was not in accordance with Germany's policy of neutrality."

9th January.—German bombing aircraft carried out a series of attacks upon unescorted merchant ships in the North Sea, among them a Trinity House vessel with lightship relief crews on board. Fourteen craft were attacked and there were many casualties from drowning and from machine-gun fire. Three British were sunk and two Danish damaged.

Other shipping losses included the Union-Castle liner " Dunbar Castle," sunk by mine off the South-East coast whilst outward bound to the Cape in convoy.

Major-General A. G. L. McNaughton, commanding the Canadian division, arrived in France on a visit to the B.E.F.

It was announced that a Cypriot transport unit had joined the B.E.F.

Following a decision to include all units of the R.A.F. in France in one R.A.F. command, Air-Marshal A. S. Barratt was appointed **Air Officer Commanding in Chief, British Air Forces in France.**

The Finns continued their clearing up operations near Suomussalmi.

10th January.—During the night 9th/10th January the R.A.F. patrol over the German seaplane bases dropped bombs on the island of Sylt. According to Danish reports the damage done was extensive, the Hindenburg Dam being completely cut at one point.

In the course of a day reconnaissance a R.A.F. reconnaissance formation engaged a number of long-range enemy fighters over the North Sea. One Messerschmidt 110 was seen to crash into the sea and another was forced down in Denmark. One R.A.F. machine was lost, but the formation completed its task before returning.

The week ended 6th January showed 6,200 tons of goods intercepted by the **British Contraband Control,** making a grand total for eighteen weeks of war **544,000 tons.**

Reports from Finland seemed to show that there were fresh concentrations of Russian troops in the Salla and Lake Kianta regions, obviously preparing for fresh advances into the "waist-line." Hundreds of Russian aeroplanes were reported to be frozen up in their positions on the eastern frontier of Finland.

11th January.—The R.A.F. Coastal Command made a bombing attack on three enemy destroyers off Horns Reef. No damage was suffered by the British aircraft.

German aeroplanes crossed the British coast at many points, obviously on reconnaissance, and anti-aircraft guns were in action in East Scotland, Firth of Forth, Humber estuary, South Shields, Newcastle and Thames estuary. The enemy was, in most cases, soon chased out to sea by R.A.F. fighters.

Two Aberdeen trawlers were machine-gunned by two German aeroplanes, but escaped after sacrificing their fishing gear.

A German merchantman was reported to have scuttled herself off the West coast of Africa in order to evade capture; another

German ship was said to have been sunk by collision with an iceberg off the coast of Iceland.

The first detachment of Italian volunteers was reported to have arrived at Helsinki. The King of Sweden, in his speech at the opening of Parliament spoke of Sweden's obligation to give Finland all the help, " material and humanitarian," possible. Russia called upon two more classes (1921 and 1922) to register for enlistment.

12th January.—During the night 11th/12th a R.A.F. reconnaissance was carried out over Hamburg, Bremen, Frankfurt and the Ruhr.

Enemy air attacks were again made upon shipping in the North Sea. A trawler was sunk and a lightship was bombed, its light put out, and the crew machine-gunned when they took to their boat.

The Russian forces in the Salla district were reported to be making desperate efforts to break up an encircling movement initiated by the Finns. Twenty Russian divisions (400,000 men) and 2,000 guns, were said to be concentrated opposite the Mannerheim Line.

13th January.—On the night 12th/13th a **R.A.F. reconnaissance** was carried out **over Eastern Germany, Austria and Bohemia.** All our aircraft returned safely.

About 300 Russian aeroplanes raided Finnish towns including Helsinki. Unconfirmed news from Danish sources pointed to a big Russian drive towards Kemijärvi—another threat to the " waist-line " of Finland—and preparations for a new advance from the Petsamo region.

The R.A.F. reconnaissance over Austria and Bohemia—the most extended operation of its kind since the beginning of the War—was a fine tribute to the efficiency of our aircraft and the skill of the pilots. It effected a complete surprise, for Vienna and Prague were both reported to be " fairly well lighted," and the moral effect of the performance was undoubtedly great.

German mines continued to take toll of allied and neutral shipping, as did the air attacks upon small merchantmen and trawlers, a form of " warfare " difficult to combat so long as fishing and coastal craft pursued their ordinary avocations.

The Indian and Cypriot transport units which joined the B.E.F. provided a further example of Empire unity, and their mules and carts might, under winter conditions, be counted a valuable adjunct to mechanized transport.

Belgium was again apprehensive of Germany's intentions, but it was evident that the German government was still hesitating to adopt the desperate expedient of the invasion of the Low Countries.

From Moscow came reports of the removal of highly-placed officers and commissars, and fresh mobilization. At the end of the week it appeared that Russia had started a new drive through the " waist-line " of Finland.

Despite her opposition to Russian aspirations, there was no doubt that Italy intended to continue her " non-belligerent " policy. The Italian press continued its obstinate misrepresentation of the allied war-aims.

An official summary of French naval operations during the first four months of the War claimed ten German submarines destroyed and many more damaged. French merchant tonnage (taking the latest peace-time figures) was said to have suffered a loss of 2 per cent., in proportion about the same as the British.

CORRESPONDENCE

[*Correspondence is invited on subjects which have been dealt with in the* JOURNAL, *or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the* JOURNAL.—EDITOR.]

CO-OPERATION.

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—In his article, "Modern Warfare—Mobile or Missile?" in the November number of the JOURNAL, F. S. B., whilst quoting apparently contradictory extracts from official manuals, bases his views on the assumption that mobile warfare and missile warfare are opposites, whereas fire power, and assaulting power, should and always have in the past, been used in combination, each being dependent the one on the other.

Although static warfare has come on the Western Front, training for open warfare is the best method of inculcating the Principles of War and so getting quick thinking and quick action. Static warfare induces a static mind.

Mobile warfare may come at any time, as the writer points out, not always from tactical causes. Napoleon, himself a gunner, said " Tactics, the science of the engineer, of the gunner can be taught nearly as well as geometry. But the knowledge of the higher parts of war can only be acquired from experience and from studying the history of the wars of the Great Commanders. You cannot learn from a grammar how to write a book of the *Iliad*, a tragedy of Corneille."

In his *Principles of War*, Foch argued " Any improvement in firearms is ultimately bound to add strength to the offensive, to a cleverly conducted attack " but it is an established fact that defence is less costly than attack. Nevertheless, forward movement is generally desirable, especially if it means transferring the battlefield from one's own to the enemy's country. Opportunities will occur when without disproportionate loss such advances can be made. To take advantage of these fleeting opportunities we must be trained to think and act quickly ; we must have mobility and a mobility relatively superior, if possible, to that of the enemy. The recent battle off the River Plate appears to have been a very fine example of superior mobility, superior marksmanship and perhaps the use of obscurity—the smoke screen laid by the enemy.

As to the battle of Cambrai to which the writer refers, the tanks, as a new weapon, were rightly given a large amount of the credit, but this does not detract from the efforts of the other branches of the Service, *e.g.*, the artillery, by means of flash spotting, etc., dispensed with registration and made the surprise possible, and when they opened fire practically silenced the enemy's guns.

Tanks have made possible " fire with movement " as great a step forward as was the introduction of the socket bayonet which made pikemen obsolete. This does not mean, however, that tanks can fight entirely unaided by artillery.

As for infantry, there will be occasions when it can be dispensed with, but it will be required for consolidation of positions won, and especially in times and places of obscurity, night, fog, smoke, woody country, etc.

With regard to the writer's reference to obscurity, the use of smoke, or the half light of early morning, who can doubt that these conditions limit the power of missile weapons and so equalise the chances of attacker and defender, while the attacker or counter attacker has also the advantage of the initiative ?

Whether they are infantry or tanks, " infighters " will always be required to make good the ground won by missile and admittedly chiefly artillery action. Apparently the writer would like artillery to be called the " attackers " and infantry the " supports." What does it matter ? " What is in a name ? " Whatever our Service or branch of the Service, we must not be blinded to the fact that correct co-operation is essential to success in war. We must not be parochially minded or tied down by fixed ideas or customs.

Artillery and engineers will, it goes without saying, be required, as their motto " Ubique " says, everywhere.

F. S. THACKERAY,

26th December, 1939. *Brigadier-General.*

MANNING SHIP.

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—With reference to Admiral Sulivan's letter in the November issue of the R.U.S.I. JOURNAL, he may be interested to know that in October or November, 1913, I sailed from Simonstown in H.M.S. " Mutine," flying a paying-off pennant, and with yards manned. The men were not massed in the rigging but cheered ship from the forecastle. I think this may be the last occasion on which one of H.M. ships manned yards under way.

J. A. EDGELL,

20th December, 1939. *Vice-Admiral.*

NAVY NOTES

GREAT BRITAIN

H.M. The King

Visit to the Fleet.—The King paid a two days visit to the Home Fleet at one of the northern bases on 6th to 8th October. His Majesty visited representative ships and inspected officers and men from vessels of all classes, including armed merchant cruisers and various fleet auxiliaries. He also visited one of the northern air stations of the Fleet Air Arm where he decorated several officers and ratings who had distinguished themselves in action. His Majesty made the following signal to the Commander-in-Chief, Home Fleet, on leaving :—

> " I am very glad to have had this early opportunity of visiting a portion of the Fleet and its auxiliaries at the Northern base.
>
> " Having visited representative ships and establishments, I have been much impressed by the keen and cheerful spirit that unites you in a determination to bring the war to a successful conclusion. Your task may be long and arduous, but I have every confidence in your ultimate success.
>
> " Please convey to all those under your command my high appreciation of their efforts and my sincere good wishes for a safe return to their homes."

On 4th December the King crossed to France in a warship, escorted by destroyers and aircraft to visit the British Expeditionary Force. The passage was exceedingly rough, but he spent the whole time on the bridge. Two French men-of-war met the Royal convoy, and French aircraft also joined the escort. The King received the Commander-in-Chief of the British Expeditionary Force and the Adjutant-General on board before landing. His Majesty returned to England on 10th December.

On 18th December, the King paid a visit to the Plymouth Naval Command. In addition to inspecting naval establishments, barracks, and a hospital, he went on board H.M.S. " Defiance," torpedo school, and a minesweeping trawler and a destroyer. Next day, his Majesty visited the Portsmouth Command, going to the " Vernon," " Excellent," the R.M. Barracks at Eastney, the Signal School, and the R.N. Barracks.

Board of Admiralty

Anglo-French Co-operation.—The First Lord of the Admiralty, accompanied by the Deputy Chief of the Naval Staff, visited Paris from 2nd to 5th November to discuss the work of the British and French Navies, who are carrying out their joint tasks in active co-operation.

Visit to the Fleet.—Later in November, the First Lord paid a visit to the Home Fleet in the North.

New Fifth Sea Lord.—It was announced on 27th November that the King had approved of the appointment of Vice-Admiral Guy C. C. Royle, C.B., C.M.G., to be a Lord Commissioner of the Admiralty and Chief of Naval Air Services, in succession to Vice-Admiral the Hon. Sir Alexander R. M. Ramsay, G.C.V.O., K.C.B., D.S.O., to date 21st November, 1939 ; and of Captain Edward N. Syfret, R.N., to be Naval Secretary to the First Lord of the Admiralty in succession to Vice-Admiral Guy C. C. Royle, to date 23rd November, 1939.

A.C.N.S. on The Board.—An official photograph of the Board of Admiralty in session published on 20th November showed that the Assistant Chief of the Naval Staff, Rear-Admiral H. M. Burrough, C.B., had been given a seat on the Board.

Flag Appointments

The Nore.—It was announced in the Press on 5th December that Admiral the Hon. Sir Reginald A. R. Plunkett-Ernle-Erle-Drax, K.C.B., D.S.O., had relieved Admiral Sir Studholme Brownrigg, K.B.E., C.B., D.S.O., as Commander-in-Chief, The Nore. Sir Reginald relinquished the appointment of Commander-in-Chief, Plymouth, on 24th October, 1938. During August, 1939, he served as Head of the British Mission to Moscow for military conversations with the Soviet Government.

Flag List Changes

Admiral Sir Sidney R. Bailey, K.B.E., C.B., D.S.O., was placed on the retired list, to date 15th December, 1939, and in consequence :

Vice-Admiral the Hon. Sir Alexander R. M. Ramsay, G.C.V.O., K.C.B., D.S.O., was promoted to Admiral.

Rear-Admiral Reginald V. Holt, C.B., D.S.O., M.V.O., was promoted to Vice-Admiral.

Obituary

Rear-Admiral Wilfred Neville Custance, C.B., died on 13th December, and was buried at sea, on his way home from Australia, where he had commanded H.M. Australian Squadron since April, 1938. He was 55 years of age.

Honours and Awards

River Plate Action

The Admiralty announced on 17th December that in recognition of the gallant and successful action fought by H.M. ships " Ajax," " Achilles " and " Exeter " against the German battleship " Graf Spee," H.M. the King has been pleased to appoint Commodore Henry Harwood to be a Knight Commander of the Order of the Bath ; and Captains W. E. Parry (H.M.S. " Achilles "), C. H. L. Woodhouse (H.M.S. " Ajax "), and F. S. Bell (H.M.S. " Exeter ") to be Companions of the Order. Commodore Harwood was also promoted to be a Rear-Admiral in H.M. Fleet, to date from 13th December, the date of the action. The Admiralty called for recommendations from Rear-Admiral Harwood in respect of the good conduct and forwardness in action of the officers and men in the squadron under his command.

On 28th December, the Admiralty announced the following promotions, all to date 13th December :—

Commander D. H. Everett, H.M.S. " Ajax," to be promoted to Captain.

Lieutenant-Commanders R. B. Jennings and C. J. Smith, H.M.S. " Exeter," and Lieutenant-Commander P. T. A. Love, H.M.S. " Achilles," to be promoted to Commander.

Engineer-Commander L. C. S. Noake, H.M.S. " Ajax," to be promoted to Engineer-Captain.

H.M.S. "Salmon"

Honours and promotions were announced on 21st December to officers and men of H.M. submarine "Salmon" for "a brilliant war patrol in which she succeeded in totally destoying an enemy submarine and torpedoing at least one enemy cruiser." They included the following:—

Lieutenant-Commander Edward O. Bickford, in command, to be an Officer of the Distinguished Service Order, and promoted to Commander.

Lieutenant M. F. Wykeham-Martin, First Lieutenant and Torpedo Officer; Lieutenant R. H. M. Hancock, and Mr. O. F. Lancaster, Warrant Engineer—all to receive the Distinguished Service Cross.

H.M.S. "Mohawk."

On 22nd December, awards were announced to officers and men of H.M. destroyer "Mohawk" for their conduct in action when enemy aircraft raided the Firth of Forth on 16th October. The posthumous award of the Medal of the Military Division of the Order of the British Empire was made to the late Commander Richard F. Jolly, R.N., who brought his ship into harbour when mortally wounded. Lieutenants D. G. D. Hall-Wright and A. L. Harper were among those mentioned in despatches.

Flotilla Service

Awards were also announced on 22nd December to a number of officers and men of destroyer flotillas and other craft for successful actions against enemy submarines. Eleven officers in destroyers and submarines received the D.S.O., and thirteen officers in various craft the D.S.C.

Lieutenant John H. Eaden, R.N., commanding H.M. submarine "Spearfish," was awarded the D.S.C. and two ratings the D.S.M., "for courage, seamanship and resolution in bringing their ship safe home after many prolonged and violent enemy attacks which almost put her out of action." Several officers and men were mentioned in despatches.

Examination of Enemy Mines

During his visit to Portsmouth on 19th December, H.M. the King conferred the D.S.O. on Lieutenant-Commanders J. G. D. Ouvry and R. C. Lewis, the D.S.C. on Lieutenant J. E. M. Glenny, and the D.S.M. on two ratings, "for great courage and skill in securing and stripping live enemy mines, without regard for their own safety."

H.M.S. "Ursula."

On 26th December, it was announced that the King had approved decorations and awards to officers and men of H.M. submarine "Ursula" in recognition of their services in connection with the destruction of an enemy cruiser off Heligoland. Lieutenant-Commander G. C. Phillips, R.N., was awarded the D.S.O. and promoted to Commander to date 22nd December. Lieutenant J. D. Greene, R.N., and Lieutenant A. D. Piper, R.N.R., were awarded the D.S.C.

A further long list of awards was issued with the New Year Honours.

Personnel

Transfer of Officers from R.N.R.—Transfers of officers of the R.N.R. and Merchant Navy to the Royal Navy have been suspended until further notice, but applications already received have been noted, it was announced on 8th October.

SEAMEN AS AIR PILOTS.—The training of selected seamen and marines as aeroplane pilots has been suspended, and no further selections will be made until further orders.

LOWER DECK PROMOTIONS.—The policy of promoting an increasing number of men from the Lower Deck and from the younger Warrant Officers to permanent Commissions will receive a wider scope, and direct promotion will also be extended to the Accountant Branch. The average of such commissions over the last four years has been fifteen. During the War, it is expected that at least seventy-five Commissions from the Lower Deck will be given annually.

BONUS FOR RE-EMPLOYED OFFICERS.—The engagements under which Retired Officers re-employed on a naval basis were serving were cancelled as from 31st August, 1939. Such officers will be regarded as called up from 1st September; they will be paid 25 per cent. bonus on full pay from that date, and will be available for general service. Officers were, however, given the option of remaining on their existing terms of service if it was to their advantage.

WARRANT OFFICERS.—The system of selective promotion will not be applied during the war to retired Warrant Officers recalled for service. These officers will continue to be dealt with under the former rules, and promotion to Commissioned Officer from Warrant rank will normally be made on completing ten years service as Warrant Officer on the Active List and during re-employment.

BOYS SERVING AFLOAT.—The First Lord stated in the House of Commons on 25th October that 5,000 boys under eighteen in the Royal Navy are serving at sea, and 137 had become casualties. He could not consider the withdrawal of boys from active service at sea during the war, but in future the parents' consent would be obtained if, in an exceptional case, the boy's training at sea would start below the age of seventeen.

MANNING.—Some 46,000 reservists of all classes were called up when the Navy was mobilized. Of these, 15,500 were men who had served for twenty-two years and then retired on pension; the next largest class, 11,000, were men of the Royal Fleet Reserve, short service ratings who had served for between five and twelve years before joining the R.F.R. The R.N.R. provided 4,500, the maximum which could be taken from that source without dislocating essential shipping services. The R.N.V.R. provided 5,000, and the remainder came from the R.N.R. Patrol Section, R.N.V.R. Wireless Reserve, the Auxiliary Sick Berth Reserve, and pensioners and reservists of the Royal Marines. Of the total of 46,000, some 5,800 were exempted for varying periods up to six months, if not permanently, on good grounds. The war-time expansion of the Navy will be mainly provided out of men called up under the National Service Acts who express a preference for sea service, up to a total of about 50,000. In November, there was a special call for fishermen for mine-sweeping, and in December for men under thirty-five experienced in physical training.

CANTEENS.—As a temporary measure during the War, Commanders-in-Chief, Flag Officers and Commodores have authority to approve the opening of wet canteens in naval establishments on shore under their command without submission to the Admiralty.

LEAVE AND TRAVELLING.—Instructions have been issued that the officers and men of all seagoing ships in home waters and those serving at isolated bases are to be given as much leave as circumstances permit. Subject to operational requirements, every opportunity will be taken to give leave when ships are refitting,

docking, undergoing repairs, or cleaning boilers ; and administrative arrangements are being made to enable the fullest possible advantage to be taken of these opportunities for rest. At least fourteen days leave a year will be given, and leave will not be restricted by any maximum when circumstances allow of more being given. The authorities at the ports were authorised to grant up to seven days leave at Christmas wherever this was possible without detriment to the work of the establishment.

On 1st December, the Admiralty announced that the concession of free travelling warrants twice every twelve months had been extended to all officers and men, wherever serving. As a general rule, these free warrants were for journeys to the homes of naval personnel, but in cases where good reason can be given for an alternative destination, a commanding officer may now authorise the issue of a travel warrant to other places.

Pay and Allowances

Provisions.—An addition of 3d. a day in provision and leave allowances was announced on 16th December, with effect as from 1st November. The improved rates are : Officers, 3s. 3d. a day ; men, 2s. 6d. a day ; Shore Wireless Service, 2s. a day. Leave allowance has been fixed at 2s. 6d. a day.

Pension Increases.—Improvements were announced in November in the scales of compensation payable for disablement or death attributable to peace-time service since 30th September, 1921, in the case of regular and non-regular ratings of the R.N. and R.M. The increases apply with effect from 1st June, 1939, to personnel entered in the United Kingdom, or entered abroad for general service. The classes of dependents were widened to include, under certain conditions, step-children, legally adopted children, and illegitimate children.

The rate of pension payable to the widow of a Warrant Officer whose death is attributable to peace-time service since 30th September, 1921, has been increased from £70 to £80 a year with effect from 1st June, 1939.

Marriage Allowance.—The marriage allowance scheme has been extended to officers under thirty, and to officers from Warrant rank and Warrant Officers under twenty, at the reduced rate of 3s. a day, with children's allowance of 1s. 6d. a day for one child and 2s. 6d. a day for two or more children. For Sub-lieutenants aged thirty or over the rates will be : Marriage allowance of 3s. a day ; for first child, 1s. 6d. a day, second child, 1s. ; and each subsequent child, 1s. On the death of an officer who was drawing marriage allowance, a weekly payment will be made to his widow for thirteen weeks, or the guardian of his children at the rate of his marriage allowance, plus two days' pay. At the end of the thirteen weeks the widow's pension will begin. The same arrangement is authorised for ratings whose deaths occur during hostilities.

Lodging Allowance.—In peace time, the regulations governing removal allowance for officers in shore appointments at home assume that an officer will normally live with his family. Lodging allowance has therefore not been payable in addition to marriage allowance, except in cases where an officer is temporarily separated for Service reasons. The Admiralty appreciates that under war conditions these regulations can no longer apply, and that in many cases a married officer's family will not reside near his place of duty. The regulations have been revised to meet such cases, and amended allowances are provided for. No removal allowances are to be paid in future, and the question of married or single quarters, and the allowances which depend upon accommodation, will be decided according to the circumstances of each case.

HARD-LYING MONEY.—Hard-lying money at full rates is to be paid to the personnel of trawlers engaged in minesweeping and anti-submarine service, and will be credited as from the outbreak of hostilities. This was announced in a Parliamentary reply on 20th December.

SALVAGE OF THE "THETIS."

The submarine "Thetis," which sank in Liverpool Bay during diving trials on 1st June, was successfully refloated on 23rd October and taken inshore, where she could be drained before being towed to dry dock. The task of removing thirty-four bodies from the sealed stern compartment was completed on 12th November by a team of six Cannock Chase mines rescue workers. The inquest was resumed at Holyhead on 13th November, when the Coroner said they had dealt with all of the ninety-nine bodies and only eight had not been identified. The inquiry was adjourned. The "Thetis" was brought to Birkenhead on 18th November.

The public enquiry held by Mr. Justice Bucknill was resumed at the Law Courts on 11th December and concluded on 15th December. In due course the report was to be submitted to the proper authorities.

MISCELLANEOUS

ROYAL YACHT PAID OFF.—The Royal yacht "Victoria and Albert" has been paid off for the duration of the War, following the precedent set in the war of 1914-18. Then the officers and crew were transferred to a new ship which joined the Grand Fleet, but on this occasion they have been distributed among the ships of the Fleet.

YANGTSE GUNBOATS WITHDRAWN.—It was announced on 2nd October that the Admiralty had decided to withdraw several of the gunboats from patrol service on the Yangtse River for employment elsewhere. It was not thought justifiable to keep these ships and their highly trained crews in China on duties which could not be called essential for the prosecution of the war. Five gunboats were withdrawn in October, and three more in December.

MERCHANT NAVY BADGE.—Replying to a question in the House of Commons on 5th December, Sir John Gilmour, Minister of Shipping, said that the King had approved of the issue of a badge for the Mercantile Marine. Distribution of this badge to officers and men in the Merchant Navy was to begin on 1st January. The badge would also be issued to deep-sea fishermen.

CASUALTIES

Approximately 2,100 officers and other ranks lost their lives on active service in the first three months of the present war, compared with about 12,500 in the first three months of the last war. These figures were given on 14th December in a written reply in the House of Commons by the Prime Minister. Of the total, the loss of life in H.M.S. "Courageous" sunk on 17th September and H.M.S. "Royal Oak," sunk on 14th October, accounts for over 1,300.

ROYAL MARINES

RETIREMENT.—General Sir William W. Godfrey, K.C.B., C.M.G., was placed on the retired list at his own request, to date 2nd October, 1939.

PROMOTIONS.—Colonel Commandant (temporary Brigadier) Alfred L. Forster, D.S.O., to be Major-General; Colonel Second Commandant Gordon H. Seath, D.S.O., to be Colonel Commandant (temporary Brigadier); and Lieutenant-Colonel Norman K. Jolley, O.B.E., to be Colonel Second Commandant (with seniority as Colonel, 30th June, 1938)—all to date 1st December, 1939.

DOMINIONS

AUSTRALIA

NEW CONSTRUCTION.—On 13th October, Brigadier Street, Minister of Defence, announced that four 700-ton coastal sloops for patrol, minesweeping and anti-submarine services would be completed within twelve months, one in Melbourne, two in Sydney, and one in Queensland. The vessels are modified versions of the sloops "Yarra" and "Swan," and will also be suitable for training duties. The allocation of construction to other shipyards will allow the Cockatoo Island yard's programme of destroyers, sloops and boom defence vessels to proceed uninterruptedly.

OTHER INCREASES.—It was also announced that the Australian Navy had been increased by more than thirty requisitioned merchant ships, ranging from armed merchant cruisers to minesweepers; all were on active service by mid-October after a fine effort by the shipyards in rushing through alterations. The naval personnel had increased from 5,000 to 10,000.

THREE NEW DESTROYERS.—After a meeting of the War Cabinet on 1st November Mr. Menzies, the Prime Minister, announced the Government's decision to build three destroyers of the "Tribal" class instead of two, as originally announced. The Government would consider expanding the construction programme as building facilities improved, and would build ships for the United Kingdom if necessary. Many ships had been chartered for mine-sweeping and anti-submarine work. Fast and powerful merchant ships had been heavily armed for local defence and for attachment to the British Admiralty. Defensive guns had been placed on more than sixty oversea ships. Navy personnel had been doubled, totalling 10,000, and all reserves had been called up for continuous training.

NEW ZEALAND

RIVER PLATE ACTION.—The New Zealand Division, Royal Navy, was prominently represented in the action off the River Plate which resulted in the destruction of the "Admiral Graf Spee," H.M.S. "Achilles," one of the cruisers engaged, having been serving on the New Zealand Station when war was declared. A large number of her crew came from the Dominion, and some were killed in action.

SOUTH AFRICA

H.M.S. "EREBUS" RE-TRANSFERRED.—Arrangements were agreed upon between the Governments of the United Kingdom and the Union of South Africa some months before the War whereby the 15-in. monitor "Erebus" would be lent to the Union Government in connection with the defences of Capetown. After the outbreak of hostilities, the Union Government agreed that the vessel should be transferred to the Admiralty, and other arrangements have been made for the proper and adequate defences of Capetown harbour.

SEAWARD DEFENCE FORCE.—The formation of a South African Seaward Defence Force was officially announced at Capetown on 13th November. The force will undertake responsibility for minesweeping and anti-submarine work off the South African coast. It will be recruited from the R.N.V.R., the South African Naval Service, and Retired Naval Officers who have acquired Union nationality. Rear-Admiral G. W. Hallifax has been appointed Director of Seaward Defence in Capetown.

GIFT OF A DESTROYER.—The Mayor of Port Elizabeth has opened a fund to raise £300,000 for the building of a destroyer to be known as H.M.S. " South Africa." One of the first contributions was 100 guineas from Sir William Campbell Mitchell Cotts, as " a Scotsman born in South African ".

INDIA

TRANSPORT OF TROOPS.—It was officially announced on 30th October that all troops that had proceeded out of India had arrived safely at their destinations. Some Indian officers of the Royal Indian Navy were working with the Royal Navy for war duties.

MALTA

There is a total of 1,300 Maltese ratings serving in the Royal Navy out of a community which numbers altogether only 260,000.

NEWFOUNDLAND

NAVY RECRUITS.—On 23rd October, a proclamation issued at St. John's announced that the Admiralty was asking Newfoundland to supply 625 men for the Navy. Enlistment is for the duration of the War, and the eligible ages are 18 to 35. Those used to the sea and to the handling of boats are sought. There has been a gratifying response. A quota was taken from each district to make the contingent as representative as possible. The St. John's quota had already been filled by 15th November, when batches of recruits from Harbour Maine and the Southern Shore had reached the city.

EIRE

COASTAL FORCE.—At the end of November the Government Information Bureau in Dublin announced that the national defence required the establishment of a small Marine Service, in addition to the Coast Watching Service. Some motor torpedo-boats were being delivered, and it was proposed to commission some armed trawlers. On 5th December, Mr. Oscar Traynor, Defence Minister, announced in the Dail that Eire is to spend £250,000 on craft for coastal defence.

FOREIGN NAVIES

FRANCE

NEW BATTLESHIPS.—A fourth 35,000 ton battleship—the " Gascoigne," is being built in the Loire Yards at St. Nazaire. The other three are the " Clemenceau," (also of the 1938 programme), and the " Jean Bart " and " Richelieu " of the 1935 programme. These ships will form a homogeneous squadron each mounting a main armament of eight 15-in. and fifteen 6-in. guns. They will be well armoured and have a speed of at least 30 knots, and carry four aircraft. The " Richelieu " is due for completion during the present year; the remainder in the course of the next two or three years.

NEW AIRCRAFT CARRIERS.—Two carriers of 18,000 tons are building under the 1938 programme. According to *Jane's Fighting Ships* they will carry eight 5.1-in. A.A. guns, have a speed of 32 knots, and accommodate 40 aircraft.

NEW CRUISERS.—Three 8,000 ton cruisers of the " De Grasse " class are building ; the first is due for completion in 1941. They will be armed with nine 6-in. and eight 3.5-in. A.A. guns and carry four aircraft. Their general design is reported to be similar to that of the " La Galissonnière " type.

NEW DESTROYERS.—Four more destroyers of the " Mogador " class were laid down during 1939 ; also four more of the " Le Hardi " class, and ten of the smaller " Agile " class.

The " Mogador " class are ships of nearly 3,700 tons, and have the heavy armament of eight 5.5-in., four 37 mm. A.A. guns, and ten 21.7-in. torpedo tubes. It is reported that the new 5.5-in. guns have a range of 25,000 yards. The designed full speed of these vessels is 38 knots.

NEW TARGET SHIP.—A new target ship, the " Impassible " was launched in June last. She is reported to be a craft of 25,000 tons and to have a designed speed of 20 knots. Her superstructure will give the appearance of a destroyer of the " Tigre " class. She will be controlled by wireless and have an armoured tower for W.T. gear.

GERMANY

WAR LOSSES.—Germany's principal loss up to date is the " Admiral Graf Spee," scuttled in the approaches to Montevideo on 17th December, 1939, after her action with H.M. Ships " Exeter," " Ajax " and " Achilles."

The " Graf Spee " was classified as an " armoured ship," displaced 10,000 tons and carried an armament of six 11-in. guns in two turrets, eight 5.9-in. guns mounted singly and eight 4.1-in. A.A. guns. She was a sister ship to the " Deutschland " and " Admiral Scheer."

According to an American report, it was the latter ship which was damaged by the British air raid on Kiel on the 2nd September, 1939.

One of the " Köln " class, a 6,000 ton cruiser, was sunk by the British submarine " Ursula " on 14th December. A ship of the 10,000 ton " Blücher " class and another of the " Köln " class were also torpedoed on 13th December, but may not have been sunk, by H.M. submarine " Salmon."

According to a French estimate early in February the losses of German submarines were between forty and forty-five.

NEW CONSTRUCTION.—Two 35,000 ton battleships, each mounting eight 15-in. and twelve 5.9-in. guns, should be nearing completion. These are the " Bismark " and " Tirpitz " laid down in 1936 ; two more of the same type were laid down in 1937 and 1938 respectively.

The aircraft carrier " Graf Zeppelin " and a sister ship were laid down in 1936 and should be due for completion soon. They are reported to carry an armament of six 5.9-in. and ten 4.1-in. A.A. guns. Like all the latest carriers, they will have an island superstructure.

Three more 10,000 ton cruisers of the " Blücher " class are due for completion during the present year. These vessels carry eight 8-in. and twelve 4.1-in. A.A. guns and have a designed speed of 32 knots.

There are good reasons to believe that Germany is building a large number of submarines.

JAPAN

NEW CONSTRUCTION.—According to *Jane's Fighting Ships*, it is believed that four battleships of over 40,000 tons were laid down during 1938-39. It is reported that they will be armed with eight or nine 16-in. guns and have a speed of about 30 knots.

The same authority understands that five cruisers of 7,000 tons are under construction.

A new warship named the " Nisshin " was launched at Kure on 30th November last. No details were published about her, but she may be one of the new battleships or cruisers.

NETHERLANDS

NEW CONSTRUCTION.— A number of new ships are building for the Dutch Navy. Chief of these are two 8,350 ton cruisers—the " De Zeven Provincien " and " Kijkduin." They will mount ten 5.9-in. and fourteen 14 mm. A.A. guns and carry six 21-in. torpedo tubes. The designed speed is 33 knots. They were both laid down early in 1939 and are due for completion in 1941.

Four 1,628 ton destroyers are due for completion during the current year. Their armament will be five 4.7-in., and eight 40 mm. A.A. guns, and eight 21-in. torpedo tubes. Their designed speed is 36 knots.

The submarines O 21 to O 27 are due for completion in 1940-41. These craft displace 888/1380 tons ; they are armed with one 3.5-in. gun and carry eight 21-in. tubes. Their surface speed is 19.5 and submerged speed 9 knots.

Three of seven armoured gunboats were laid down in 1938 and are due for completion this year. They will displace 1,268 tons and carry four 4.7-in., and four 40 mm. A.A. guns, and have a speed of 18 knots. A fourth vessel of the same type is to be laid down this year.

NORWAY

NEW CONSTRUCTION.—Two destroyers of 1,220 tons displacement were laid down in April of last year. They will carry four 4.7-in. and two 40 mm. A.A. guns and four 21-in. torpedo tubes, and have a speed of 34 knots. They are due for completion in 1943.

Eight motor torpedo boats are on order, four from Messrs. Vosper and four from the British Power Boat Co., Ltd.

PORTUGAL

NEW CONSTRUCTION.—Under the programme of construction authorized in May, 1938, there are building three 1,400 ton destroyers ; three 900 ton submarines ; six motor torpedo boats (projected) ; two armed fishery protection vessels and some small auxiliaries.

The programme also made provision for two squadrons of scouting seaplanes, one of torpedo bombers, and one of observation aircraft.

SPAIN

The *Revista de Marina*, in reviewing the condition of the Spanish fleet after the Civil War, says that it now consists of the battleship " Jaime I " (seriously damaged and likely to be of little use) ; the 10,000 ton 8-in. gun cruiser " Canarias " ; the 6-in. cruisers " Navarra " (built in 1923), " Mendez Nunez " (built in 1924) ;

the "Libertad," "Almirante Cervera" and "Miguel Cervantes" (built between 1925 and 1931); ten modern destroyers; eight very old torpedo boats; twelve submarines; and four 2,000 ton gunboats.

The same paper says that the personnel of the Spanish fleet suffered great losses during the Civil War. During the early days more than 500 officers, representing over 50 per cent. of the total, died fighting or were massacred by the Reds. There were also heavy, though proportionately less, losses amongst petty officers and non-rated men.

NEW CONSTRUCTION.—A press report says that preparations are being made to build a new Spanish navy, the first units of which are to be a 35,000 ton battleship and two cruisers.

SWEDEN

In view of the situation in the Baltic, it is of interest to summarise the present state of the Swedish navy. This consists of: three armoured coast-defence vessels, each carrying four 11-in. and six 6-in. guns; five very old ships each mounting two 8.3-in. and six to eight 6-in. guns; the modern 4,775 ton cruiser aircraft carrier "Gotland"; eighteen modern and eight old destroyers; thirteen sea-going submarines; eight coastal submarines and six motor torpedo boats; and a number of old steam torpedo boats and auxiliary craft.

There are building two coast-defence ships of 8,000 tons, which will carry four 10-in. and six 4.7-in. A.A. guns and have a speed of 23 knots. These were laid down last year.

UNITED STATES

THE FLEET IN 1944.—An Official Report gives the following expected strength of the fleet in 1944:—

Battleships	Under Age	18	
	Over Age	9	
			27
Cruisers	Under Age	45	
(Light and Heavy)	Over Age	10	
			55
Destroyers	Under Age	150	
	Over Age	151	
			301
Submarines	Under Age	54 (?)	
	Over Age	72 (?)	
			102
Aircraft Carriers			8

OFFICERS.—The large expansion of the fleet in recent years has necessitated the retention of officers who would otherwise be due to retire after being passed over for promotion. The commanding officer of any such officers may submit their names for active employment at sea in the same capacity as they were in immediately before receiving their retirement order, and sympathetic consideration will be given to such requests. The most pressing need is for officers of ranks below Commander.

NEW BATTLESHIPS.—The laying down of the two battleships "Iowa" and "New Jersey" appears to be still postponed although they were due to be commenced last year. It is believed that the original design was for ships of 45,000 tons to carry nine 16-in. and twelve 5-in. guns, with a speed of well over 30 knots; but it is possible that this may be modified as a result of the lessons of the present war, and according to one report it is not intended to lay these ships down for many months to come.

Certain Congressmen, possessed of more imagination than naval knowledge, have proposed building battleships of 70,000 or even 80,000 tons to carry 20-in. guns. They ignore the fact that such ships could not be passed through the Panama Canal.

Admiral Stark, Chief of Naval Operations, has, however, indicated that the United States may build ships of greater displacement than 45,000 tons.

DEFECTS IN NEW CONSTRUCTION.—There appears to have been considerable criticism of some of the new construction, and a recent issue of the *United States Army and Navy Journal* has a very outspoken article on the subject in which special reference is made to defects in destroyers. It has been alleged that the new designs had top-heavy tendencies, although the President has said that these were technically slight and had now been eliminated. Mr. Eddison, Acting Secretary of the Navy, has admitted that the designs for two new cruisers were being reviewed. It would seem probable that this refers to the "Cleveland" and "Columbia," given in *Jane's Fighting Ships* as of 8,000 tons, and unofficially reported to carry twelve 6-in. guns.

ARMY NOTES

His Majesty the King

Visit to the British Expeditionary Force.—The King landed in France on 4th December, 1939, when he paid a visit to the zone occupied by the B.E.F. At the port of disembarkation he was met by General Lord Gort, Commander-in-Chief, and by Sir Douglas Brownrigg, the Adjutant-General. The Royal Party included the Duke of Gloucester, Chief Liaison Officer, Sir Alexander Hardinge, The King's Private Secretary, and Colonel Piers Legh, The King's Equerry. His Majesty wore the uniform of a Field-Marshal with a trench-coat and a slung respirator.

He conducted a strenuous inspection of the British Forces in France and covered from 80 to 100 miles a day by car. On 7th December, President Lebrun and M. Daladier, the French Prime Minister, lunched with The King. The Duke of Gloucester, General Lord Gort, and a number of French and British Staff officers of high rank were also present. Earlier in the day, The King inspected the area round G.H.Q. and paid a prolonged visit to the office of the Chief of the General Staff, where Lieut.-General Pownall explained the organization of the Corps and Army troops. The King then drove to a village where a battalion of Guards was drawn up for inspection. The parade was attended by the Mayor of the village, and his wife, who own the farm where the Guards were quartered.

On 12th December, General Lord Gort issued an Order of the Day, embodying a message from The King, which read as follows: "It has given me the greatest pleasure to visit the troops under your command in France, and the days which I have been able to spend among them have been full of interest, for I have had the opportunity of seeing for myself something of the conditions in which they are living and of the work on which they are engaged. I am satisfied from all points of view that the British soldier is at least the equal of his predecessor both in efficiency and spirit.

"I send my best wishes to all ranks of the B.E.F. and assure them of the complete and unfailing confidence placed in them by their fellow countrymen."

Colonels-in-Chief.—His Majesty The King has been graciously pleased to approve of the following appointments:—

Her Majesty Queen Mary, Colonel-in-Chief 13th/18th Royal Hussars (Queen Mary's Own), The Queen's Royal Regiment (West Surrey), Worcester and Oxfordshire Yeomanry Anti-Tank Regiment, Royal Artillery, President Queen Alexandra's Imperial Military Nursing Service, Territorial Army Nursing Service, and Queen Alexandra's Army Nursing Board, from Worcester and Oxfordshire Yeomanry, Anti-Tank Regiment, to be Colonel-in-Chief, Oxfordshire Yeomanry, Anti-Tank Regiment, Royal Artillery.

His Royal Highness Major-General The Duke of Gloucester, Earl of Ulster, K.G., K.T., K.P., G.C.M.G., G.C.V.O., Colonel, Scots Guards, Colonel-in-Chief, 10th Royal Hussars (Prince of Wales's Own), The Royal Inniskilling Fusiliers, The Gloucestershire Regiment, The Gordon Highlanders, and Personal A.D.C. to be Honorary Colonel of the Ulster Anti-Aircraft Regiments, Royal Artillery, Supplementary Reserve and Territorial Army.

Major-General H. E. Franklyn, D.S.O., M.C., to be Colonel, The Green Howards (Alexandra, Princess of Wales's Own Yorkshire Regiment), with effect from the 21st August.

Colonel (Hon. Brig.-General) Sir Archibald F. Home, K.C.V.O., C.B., C.M.G., D.S.O., to be Colonel, 11th Hussars, from 9th October, 1939.

Lieut.-General Sir Bertram Moberley, K.C.I.E., C.B., D.S.O., I.A., to be Colonel, 2nd Battalion, 13th F.F. Rifles, from 6th October, 1939.

AIDES-DE-CAMP.—His Majesty The King has been graciously pleased to approve of the following appointments as Aides-de-Camp :—

Lieut.-Colonel (hon. Colonel) W. H. Hammond, V.D., J.P., The Bombay Contingent, Auxiliary Force (India), as Aide-de-Camp to The King (Additional), with effect from 21st July, 1939.

Colonel (temp. Brigadier) G. E. H. Sim, D.S.O., M.C., with effect from 4th September, 1939.

Colonel (temp. Brigadier) C. M. S. Manners, D.S.O., M.C., Indian Army, with effect from 4th September, 1939.

Colonel (temp. Brigadier) S. T. Lucey, M.C., late The Loyal Regiment (North Lancashire), with effect from 2nd October, 1939.

Colonel (temp. Brigadier) J. N. Thomson, D.S.O., M.C., with effect from 2nd October, 1939.

Colonel (temp. Brigadier) A. P. Garnier, C.B., M.B.E., M.C., late The Royal Northumberland Fusiliers, with effect from 14th October, 1939.

Colonel (temp. Brigadier) T. Preston, C.B.E., M.C., T.D., late The Yorkshire Hussars (Alexandra, Princess of Wales's Own), Territorial Army, with effect from 14th November, 1939.

REPRESENTATIVE COLONELS COMMANDANT.—The following appointments have been approved for 1940 :—

Major-General G. M. Lindsay, C.B., C.M.G., D.S.O., retired pay, Reserve of Officers, Colonel Commandant, Royal Tank Regiment.

Lieut.-General Sir Henry Karslake, K.C.B., K.C.S.I., C.M.G., D.S.O., retired pay, Reserve of Officers, Colonel Commandant, Royal Artillery.

Major-General S. H. Sheppard, C.B., C.M.G., D.S.O., retired pay, Colonel Commandant, Royal Engineers.

Colonel (temp. Brigadier) R. H. Willan, D.S.O., M.C., retired pay, Reserve of Officers, Colonel Commandant, Royal Corps of Signals.

Major-General W. K. Tarver, C.B., C.M.G., retired pay, Reserve of Officers, Colonel Commandant, Royal Army Service Corps.

Lieut.-General Sir Harold B. Fawcus, K.C.B., C.M.G., D.S.O., D.C.L., M.B., retired pay, Reserve of Officers, Colonel Commandant, Royal Army Medical Corps.

Major-General C. D. R. Watts, C.B., C.M.G., retired pay, Colonel Commandant, Royal Army Ordnance Corps.

His Majesty The King has been pleased to approve the following appointments as Colonel Commandant, Royal Engineers :—

Lieut.-General Sir Guy C. Williams, K.C.B., C.M.G., D.S.O., with effect from 10th February, 1940.

Major-General G. H. Addison, C.B., C.M.G., D.S.O., retired pay, with effect from 30th March, 1940.

Lieut.-General E. K. Squires, C.B., D.S.O., M.C., with effect from 3rd June, 1940.

Secretary of State for War

The Right Hon. Leslie Hore Belisha, Secretary of State for War, resigned 5th January, 1940, and was succeeded by the Right Hon. Oliver Stanley, M.P.

Sir James Grigg, K.C.B., K.C.S.I., was appointed Permanent Under-Secretary of State for War, from 25th October, 1939. Sir James Grigg served with the Royal Regiment of Artillery from 1915 to 1918. After the war, he acted as Principal Private Secretary to successive Chancellors of the Exchequer and has been Finance Member of the Government of India since 1934.

Promotions and Appointments

The War Office has announced the following promotions and appointments :—

To be Acting Major-Generals, from 1st September, 1939.

Colonel (temp. Brigadier) L. Browning, O.B.E., M.C.

Colonel (temp. Brigadier) C. C. Malden.

Commands and Staff.—

To be Corps Commanders :—

General Sir John G. Dill, K.C.B., C.M.G., D.S.O., from 3rd September, 1939.

Lieut.-General A. F. Brooke, C.B., D.S.O., from 1st September, 1939.

Major-General T. S. Riddell-Webster, D.S.O., to be Deputy-Quartermaster-General, from 29th August, 1939.

Colonel (temp. Brigadier) M. O'M. Creagh, M.C., to be Inspector, with acting rank of Major-General, from 2nd September, 1939.

Major-General Sir Fabian A. G. Ware, K.C.V.O., K.B.E., C.B., C.M.G., LL.D., to be a Director-General, from 30th August, 1939.

Major-General J. W. L. Scott, D.S.O., K.H.P., to be Director, from 4th September, 1939.

Major-General D. F. Anderson, C.B., C.M.G., D.S.O., to be Major-General, General Staff, from 4th September, 1939.

Major-General P. Neame, V.C., C.B., D.S.O., to be Deputy Chief of the General Staff, from 4th September, 1939. This announcement is in substitution of the note published in the Journal for November, 1939.

Major-General R. P. Pakenham-Walsh, M.C., to be Engineer-in-Chief, from 4th September, 1939.

Colonel (temp. Brigadier) S. R. Wason, M.C., to be Major-General, R.A., from 4th September, 1939.

Colonel (temp. Brigadier) E. L. Morris, O.B.E., M.C., A.D.C., to be Director of Staff Duties and acting Major-General, from 4th September, 1939.

Colonel (temp. Brigadier) H. Macdonald, D.S.O., I.A., to be Major-General, Cavalry, India, from 15th August, 1939.

Major-General Sir Denis J. C. K. Bernard, K.C.B., C.M.G., D.S.O., to be Lieut.-General and G.O.C.-in-Chief, from 27th September, 1939.

Major-General W. H. P. Hill, C.B., C.M.G., D.S.O., to be Major-General i/c. Administration, from 29th August, 1939.

Major-General L. D. Hickes, O.B.E., M.C., to be Director, from 24th September, 1939.

Major-General R. H. Carrington, C.B., D.S.O., to be Deputy-Adjutant-General, from 2nd October, 1939.

Major-General S. S. Butler, C.B., C.M.G., D.S.O., is specially employed, from 24th August, 1939.

Lieut.-General Sir Ronald Adam, Bt., C.B., D.S.O., O.B.E., to be Commander, from 25th October, 1939.

Major-General H. R. S. Massy, D.S.O., M.C., to be Deputy Chief of the Imperial General Staff, from 25th October, 1939, and to be acting Lieut.-General.

Colonel (temp. Brigadier) P. de Fonblanque, D.S.O., to be Commander with acting rank of Major-General, from 3rd September, 1939.

Major-General Sir Bertram N. Sergison-Brooke, K.C.V.O., C.B., C.M.G., D.S.O., to be G.O.C., from 18th October, 1939.

Major-General G. M. Lindsay, C.B., C.M.G., D.S.O., to be Commander (temp.), from 27th August, 1939.

Major-General Sir Richard G. H. Howard-Vyse, K.C.M.G., D.S.O., to be specially employed, from 25th August, 1939.

Colonel (temp. Brigadier) R. F. B. Naylor, D.S.O., M.C., to be Major-General i/c Administration, from 6th September, 1939.

Major-General A. A. Goschen, C.B., D.S.O., to be Area Commander, from 1st September, 1939.

Major-General (local Lieut.-General) D. S. Collins, C.B., D.S.O., to be specially employed, from 27th October, 1939.

Colonel (temp. Brigadier) A. F. Smith, D.S.O., M.C., to be acting Major-General, General Staff, from 24th September, 1939.

Major-General Sir Evan Gibb, K.B.E., C.B., C.M.G., D.S.O., to be Director, from 17th October, 1939.

Major-General H. Needham, C.B., C.M.G., D.S.O., to be specially employed, from 25th August, 1939.

Major-General Sir John Brown, K.C.B., C.B.E., D.S.O., T.D., to be Deputy-Adjutant General (T.), War Office, with acting rank of Lieut.-General, from 4th September, 1939.

Major-General S. J. P. Scobell, C.B., C.M.G., D.S.O., to be G.O.C., from 27th October, 1939.

Lieut.-General J. H. Marshall-Cornwall, C.B., C.B.E., D.S.O., M.C., to be specially employed, from 2nd October, 1939.

Major-General A. Carton de Wiart, V.C., C.B., C.M.G., D.S.O., to a special appointment, 25th August—7th October, 1930, and to be Commander, from 28th November, 1939.

Colonel (temp. Brigadier) J. G. W. Clark, M.C., to be acting Major-General, from 1st November, 1939.

Major-General L. R. Hill, O.B.E., to be Commander, from 24th September, 1939.

Colonel (temp. Brigadier) A. E. Macrae, O.B.E., is granted acting rank of Major-General while specially employed, from 1st December, 1939.

Colonel W. P. J. Akerman, D.S.O., M.C., to be Major-General, from 2nd October, 1939.

Colonel (temp. Brigadier) F. E. Hotblack, D.S.O., M.C., A.D.C., to be specially employed with acting rank of Major-General, from 1st December, 1939.

Major-General B. C. T. Paget, D.S.O., M.C., to be Commander, from 30th November, 1939.

Major-General T. R. Eastwood, D.S.O., M.C., to be Commander, from 1st December, 1939.

Major-General B. C. Freyberg, V.C., C.B., C.M.G., D.S.O., LL.D., to be specially employed, from 4th December, 1939.

Colonel (temp. Brigadier) H. B. D. Willcox, D.S.O., M.C., to be Inspector, with acting rank of Major-General, from 21st November, 1939.

Colonel (local Brigadier) K. M. Loch, M.C., to be acting Major-General, from 25th November, 1939.

Major-General D. P. Dickinson, D.S.O., O.B.E., M.C., to be Commander, from 1st September, 1939.

General

THE GRANT OF REGULAR COMMISSIONS.—The War Office makes the following announcement :—

No further permanent Regular commissions are being given during the War with the following exceptions :—

(*a*) Cadets who were already in training at the Cadet Colleges at the outbreak of war and any other candidates from the Universities, Officers of the Supplementary Reserve and Territorial Army, and Army Cadets who had already qualified for permanent commissions or been accepted for admission to the Cadet Colleges.

(*b*) Selected Warrant Officers who will be promoted to fill peace establishment vacancies for Lieutenant and Quartermaster and similar categories.

All other commissions granted during the war will be " emergency commissions in the Land Forces for the duration of the war." It is hoped at the end of the war to offer permanent Regular commissions to selected officers who are serving on other forms of commission and who wish to make the Army their career and that such officers will be given ante-dates for all purposes to correspond with their length of service during the war.

There are two main reasons for the suspension of the grant of Regular commissions during the war :—

(*a*) To ensure that there is no repetition of the " war block " of the last war which was largely due to the fact that many candidates, having initially no intention to make the Army their career, elected to go to the Cadet Colleges and after short courses thereat were appointed to permanent commissions and subsequently decided to remain in the Army after the war : this, in turn, was primarily responsible for the slowness of promotion before the introduction of the time system in August, 1938.

(*b*) To ensure a selection of the most suitable officers for retention in the Army after the war.

MINIMUM AGE LIMITS FOR COMMISSIONS.—The War Office announces that the following minimum age limits have been laid down for men selected for training for Commissions:—

It is not the intention to send officers to serve abroad until they have reached the age of 20 with certain exceptions, mainly in favour of men who before the war had intended to make the Army their career, and who had proposed to sit for the November, 1939, Entrance Examination for the Military Colleges, men who enlisted, after general mobilization at Reception Units will not be called up for training before the age of 20, unless circumstances render an acceleration necessary. Men who are at present serving in the ranks, and who are recommended for training for commissions, will become eligible for posting to Officer Cadet Training Units at the age of 19¾ years. They will thus complete their training shortly after reaching the age of 20.

Before war broke out, volunteers were enlisted at the age of 17½. In order not to prejudice men who patriotically enlisted in the Army at an early age, and who have shown themselves worthy of training for commissions, men who enlisted before the outbreak of war and who are recommended for training for commissions may be sent to Officer Cadet Training Units at the age of 18¾. It is

thus possible for these men to receive commissions some months before they reach the age of 20, but until they reach that age, they will be employed in units at home, where their services will be of considerable value.

ROYAL PROCLAMATION.—The King signed a Proclamation on 1st January, 1940, directing that all male British subjects within Great Britain or entering Great Britain who are not already registered under the National Service (Armed Forces) Act or under the Military Training Act and who, on January 1st, 1940, had reached the age of 19, but had not reached the age of 28, are liable to be called up for service in the Armed Forces of the Crown.

This is the third Proclamation made under the Act, and its effect is to extend the liability for military service to :—

(*a*) Men of 19. But these men will not be registered or called up until they have reached the age of 20.

(*b*) Men who have reached the age of 20 since December 1st, the date of the last Proclamation.

(*c*) Men whose ages on January 1st, were 23, 24, 25, 26 and 27.

The age groups specified embrace nearly 2,000,000 men, and, so far as can now be foreseen, the Proclamation covers the man-power requirements of the three Services—the Navy, Army and Air Force—for the whole of the year. It must however, be kept in mind that the course of the war cannot be certainly foreseen and that circumstances may change.

Under the two earlier proclamations of 1st October and 1st December, the number of men registered was respectively 230,000 and 240,000. In addition, 240,000 men were registered under the Military Training Act of last June. The total number of men who have been registered or have a liability to be called up for service therefore reaches a total of between 2,500,000 and 2,750,000.

AUXILIARY MILITARY PIONEER CORPS.—The War Office has announced the formation of a new Corps—the Auxiliary Military Pioneer Corps—recruiting for which has opened throughout the country. As the age limits will normally be confined to men between 35 and 50, this new Corps is opening its ranks to the older man whose desire to serve can now be satisfied. The Auxiliary Military Pioneer Corps has been designed to carry out work, the importance of which cannot be over-emphasised, since its main object is to ensure the proper maintenance of all kinds of supplies to our armies at home and abroad. To achieve this object entails the handling at docks, bases, and depots of a vast amount of stores. To ensure the smooth transportation of such stores, roads and railways on Lines of Communication must be maintained in a fit condition for smooth and quick transit. In addition new roads may require to be constructed and light railways laid.

Pay and conditions will be the same as for British Infantry and full details can be obtained at all recruiting offices. Men in Reserved Occupations should not apply but if in any doubt they should seek advice from their nearest Labour Exchange.

UNIFORM.—The War Office announces that military uniform may, for the duration of the war, be worn only by the following :—

(A) Officers and other ranks of the Regular Army, and those of the Reserve and Auxiliary Forces who have been called up, and also such retired officers as are re-employed in a military capacity. These will wear uniform on all occasions.

(B) Officers of the Army Reserve, or the Supplementary Reserve, or the Territorial Army Reserve, not recalled for service; and other ex-officers and other ranks ordinarily permitted to wear uniform on certain occasions who are employed on quasi-military duties, even though not subject to military law, provided they are serving under the immediate orders of an officer who is so subject. These may wear uniform on all occasions.

(C) Ex-officers and other ranks who are under the existing regulations allowed to wear uniform on certain occasions but are not employed as Class B are. These may wear uniform on the appropriate occasions as before. They will not be permitted to wear it while engaged in their civilian duties, or for mere convenience. If they are members of a civil organization having an authorized uniform dress, they will, when carrying out the duties of that organization, wear its uniform, and not military uniform.

Those who wish to wear uniform but are not sure of the dress regulations should consult the nearest military authority. Those who voluntarily elect to wear uniform (Class B or C) will not be eligible for outfit allowance, or for any of the concessions or benefits to which serving military personnel are entitled. Very special cases not covered by the above may be submitted to the War Office.

Certain further modifications in dress of officers and other ranks have been approved for the duration of the war. Full dress and mess dress will not be worn on any occasion. Undress may be worn by all ranks in the evening. This dress will be optional, and it is emphasized that individuals not already in possession of it will not be required to provide it against their will. It will not be worn during the day on any occasion.

Officers proceeding out of barracks or camps in this dress will wear the Sam Browne belt (without brace or frog) or a cloth belt of the type of material and colour of the jacket approved for wear with service dress. Officers of Rifle and Scottish regiments may, alternatively, wear the belt, etc., already authorized. In keeping with the pre-war policy other ranks will not wear belts with undress.

Officers and other ranks from the B.E.F. France on leave in the United Kingdom and Northern Ireland may regard the wearing of uniform on leave as optional. All ranks, whether on leave or at their stations, may be permitted to wear plain clothes for the purpose of athletic exercises for which a special dress is necessary.

The wearing of medals and decorations will cease. Medal ribands will, however, be worn in undress, service dress and battle dress.

THE KILT.—Sir Victor Warrender, Financial Secretary to the War Office, has written to Mr. J. Henderson Stewart, M.P., explaining the official attitude towards the wearing of the kilt. The letter states :—

'The instructions given do not, as your correspondents suggest, involve the complete withdrawal of the kilt, since all ranks in possession of kilts may continue to wear them for walking out. Owing, however, to the difficulties of manufacture, no more kilts will be issued until the war is over. Our reasons for the decision, which, I can assure you, was taken after the very fullest consideration, were as follows :—(1) The impossibility of maintaining a supply of kilts sufficient to meet the requirements of the number of Highland units which now exist; (2) Agreement that the kilt affords a very poor protection against gas compared with the battle dress. I can assure you that I have every sympathy with the Highlanders, but since

all the leading Scottish officers on the active list have loyally accepted the War Office decision and realize its inevitability, the protests put forward by the various Highland societies lose a great deal of their significance."

FIRST BRITISH SOLDIER KILLED IN ACTION.—It is learned from the War Office that the first British soldier to be reported as " killed in action " in this war was Corporal Thomas William Priday, elder son of Mr. and Mrs. Allan Priday, the Gravel Pits, Redmarley, near Ledbury. He was killed on 9th December, while leading a patrol somewhere in France. Corporal Priday's parents have received a letter from his commanding officer, stating that their son was buried with full honours in a military cemetery in a French village. The French general in command of the sector attended his funeral and also sent a detachment of a French regiment.—*The Times.*

ARMED SENTRIES.—The War Office announce that as certain places of military and national importance throughout the country such as camps, bridges, factories, gasholders, electrical plants, railway junction lines, etc., are guarded by armed sentries day and night, the public are earnestly warned against trespassing and advised that when visiting such places on business they will be challenged. This also refers to searchlight and anti-aircraft gun sites. On being ordered to " Halt " they should do so immediately, announcing their presence with the word " Friend." They must then be prepared to give their names and state the nature of their business. In view of the fact that all sentries are armed with ball cartridge it is most essential that the above precautions be strictly observed.

WELFARE

OFFICERS' FAMILY ALLOWANCES.—Inquiries are being received as to the method by which allowances for married officers' families are claimed and paid. The following is the procedure :—

The officer must claim this allowance on a form which he can obtain from his Commanding Officer. After completing it he should send it to the Command Paymaster. If he is in any doubt as to what is required he should consult the Command Paymaster who is always ready to give advice and assistance.

The allowance is payable monthly in arrear, and on receipt of the form duly completed the Command Paymaster records the amount to be credited to the officer's account at the end of the month and makes arrangements for its payment. It is the responsibility of the officer to inform the Command Paymaster whether his pay and allowances are to be paid direct to the officer himself or paid to his account at a bank.

Allowances are not paid by Command Paymasters direct to families, but to the account of the officer himself. This is a point on which misapprehension has arisen.

It is the responsibility of the officer to arrange for payments to his family ; he may either instruct his bank what sums are to be paid to or drawn by his family, or he may, if he so prefers, send sums direct to the family himself.

The above procedure relates to officers only and not to other ranks.

B.E.F. OFFICERS' PASSAGE THROUGH LONDON.—Arrangements have now been completed to assist officers passing through London on leave from the B.E.F. The Nuffield Trust has made it possible for officers to have the benefit of a reduced rate for bed and breakfast at an hotel convenient to each of the London termini.

Officers should be provided by their unit before departure with a voucher issued for the purpose by the Trust. Where this has not been possible they should apply in person to one of the following addresses :—

D.A.A.G. (Leave), London Area, Room 29, Left Wing, Duke of York's Headquarters, Chelsea, S.W.3.

Railway transport officers at Victoria and Waterloo.

COMFORTS FOR THE TROOPS.—A wide variety of woollen and other goods are still needed for troops in France. These should be sent to the Army Comforts Depot, St. Mary's Butts, Reading, but at present the depot cannot receive parcels for individuals or named units. Parcels will be distributed to all units in France. If under 15 lbs. in weight packages should be sent through the post, while those over 15 lbs. and under 56 lbs. should be despatched by rail. Information is obtainable at most railway stations, and in case of doubt or difficulty can be had from the Officer in Charge of the Army Comforts Depot.

BOOKS FOR THE FORCES.—Books and literature intended for presentation to the Army and the Royal Air Force should be sent to the City of London Territorial Army and Air Force Association, Finsbury Barracks, City Road, E.C.1. Contributions of money for the purchase of books, which are an urgent need, may also be sent to the same address.

MATERNITY HOSPITAL FOR THE WIVES OF OFFICERS.—An appeal for funds has been issued to establish a Maternity Hospital for the wives of officers. A representative Council has been formed and the scheme has received the full approval of the political heads of the three Services. A suitable house has already been secured and plans for the management and supervision of the hospital are well advanced.

Enquiries should be addressed to Miss L. M. Brooks, O.B.E., 60, Portland Place, W.1.

SCHOLARSHIPS.—A pamphlet has been prepared giving particulars of scholarships and other scholastic awards available for the children of Commissioned Officers of the Army. The scholarships and awards are offered by thirty public schools and colleges for boys and by ten schools for girls. Copies of the pamphlet are available to parents on application to the Under-Secretary of State of War (C.1), The War Office, Whitehall, S.W.1.

MISCELLANEOUS

TRANSPORTING THE B.E.F.—To transport the British Expeditionary Force to France over 400 voyages were made and 174 ships of all kinds were employed.

The movement was planned and carried out, in collaboration with the Admiralty and the War Office, by a department of the Ministry of Shipping, while it was still part of the Board of Trade. The large shipping programme involved in the movement of the Force was accomplished in almost exact accordance with the scheduled plan.

THE TERRITORIAL ARMY

In the House of Commons, on 5th December, 1939, Sir Robert Tasker asked the Secretary of State for War, if, in view of the widespread idea that the Territorial Army ended with the outbreak of war, he would issue a statement on the present position of the Territorial Army ; and if instructions had been issued that the letter " T " was to be removed from the uniform worn by members of the Territorial Army.

Mr. Hore-Belisha in a written reply stated : " I am glad to have the opportunity of dispelling a misconception. The Territorial Army did not end at the outbreak of war. On the contrary, in accordance with the intention announced some years ago, all expansion since the war has been based on the Territorial Army. Men, who, since the outbreak of war, have volunteered for service for the duration of the war have been enlisted into the Territorial Army, while every man called up for military service under the National Service (Armed Forces) Act, 1939, has been deemed to have enlisted in the Territorial Army.

" Thus, the Territorial Army does exist, but, in the operational necessities of war, the whole of the Forces must constitute one Army in which each individual is placed where his attainments are of greatest use to the nation. For this reason and to avoid obvious outward distinction in the field, it was decided to suspend, during war, the wearing of the letter ' T '."

The answer given by the Secretary of State to Sir Robert Tasker, would seem to have made perfectly clear the present status of the Territorial Army : nevertheless certain battalious and units are still being described as " ex-Territorial " " formerly Territorial " or " now Regular Army." It would be much appreciated if when reference is made to Territorial Army units are described as Territorial, a distinction of which they are very proud.

The War Office has decided that, although the Territorial Army is merged in the Regular Army, the county Territorial Association must continue to function.

CANADA

The first contingent of the Canadian Active Service Force landed at a Western port in Great Britain on 17th December, 1939.

The troops were greeted by the Secretary of State for the Dominions, Mr. Eden and by command of the King, General Sir Charles Grant was also present to welcome them to England on behalf of His Majesty.

After disembarking, the troops proceeded to a South county camp, where they will complete their training before resuming their voyage to the front.

INDIA

Commissions in the Indian Army.—As the number of officers, British and Indian, which will be required for the Indian Army after the War cannot be foreseen, the Government of India have decided that no permanent commissions will be given except to those Cadets now at the Indian Military Academy and those successful in the recent competitive examination and due to join as Cadets in January next.

Cadets who join the Indian Military Academy after that date, and all other officers required for the Indian Army, British and Indian, will receive emergency commissions for the duration of the war. At the conclusion of hostilities those who desire to make the Army their career will be eligible to be considered for the grant of permanent commissions.

Fifty Europeans recruited from civil life have started training for Emergency Commissions in the Indian Army at the Officers' Training School at Belgaum. Further batches of men will be called up each month.

The Marquess of Zetland, Secretary of State for India, has announced that His Majesty's Government have decided that during the present emergency Indians, Anglo-Indians, and Burmans who are in the United Kingdom are to be on the same footing as British subjects of pure European descent as regards voluntary

enlistment in the armed forces and as regards eligibility to be considered for the grant of emergency commissions in those forces. This principle will apply in the case of all three Services, the Royal Navy, the Army, and the Royal Air Force.

INDIAN CONTINGENTS.—The India Office has announced that all troops that have sailed from India have arrived safely at their destinations. No Indian units have suffered any loss en route.

According to Press reports, the Indian troops at present in France include companies of the Royal Indian Army Service Corps, and detachments of the Royal Indian Army Veterinary Corps, brought to France in charge of animal transport.

Gifts of comforts suitable for men from a hot climate wintering in France—such as caps, scarves, mittens, gum boots, stockings and socks—should be sent to the hon. secretary, Indian Comforts Fund, India House, earmarked for Indian troops with the B.E.F.

GARRISONS IN NORTH CHINA

The War Office announces that the British Government, who maintain in North China, in accordance with the International Protocol of 1901, certain military forces, have decided for reasons of military convenience arising from the conflict in Europe to maintain there only the effectives necessary to protect property and maintain order.

This decision has been notified to the various Governments who equally maintain garrisons in North China under the 1901 Protocol.

The International Protocol of 1901 provided for the maintenance of garrisons in Northern China by the powers engaged in the Boxer campaign.

FOREIGN

POLAND

German propaganda has endeavoured to create the impression that Poland was sacrificed by her Allies fruitlessly and that the efforts of the Polish Army contributed nothing to the Allied cause. In fact, however, Poland's contribution towards the final victory of her Allies was important, as the following points show :—

(*a*) The casualties inflicted by Poland on the German Army were undoubtedly greater than the figures given by Hitler in his Reichstag speech. Even if German losses totalled only 150,000 casualties (a reasonable estimate), this represents a considerable wastage at the outset of what may be a long war. German losses in aircraft and material also were considerable, and consumption of petrol—the weakest point in her supply system—was enormous.

(*b*) By holding about 70 German divisions on the Eastern Front the Polish Army enabled France to complete her mobilization without disturbance.

(*c*) By compelling Germany to concentrate the bulk of her Air Force on the Eastern Front, Poland contributed greatly to the safe transportation of the B.E.F. to France.

(*d*) The Polish campaign has furnished the Allies with valuable information as to the tactics developed by Germany in the use of aircraft, tanks, and motorized units.

(e) There is reason to believe that the inability of German infantry to advance without tank support against even relatively weak Polish defensive positions came as a severe shock to the German Higher Command, who are aware that the Maginot Line is an infinitely more formidable proposition.

The following statement has been published by the War Office in connection with German claims in Poland :—

" Germany has added yet again to the mounting list of her breaches of international law in Poland by incorporating large numbers of Polish prisoners of war in her own army.

" This is a direct violation of The Hague Convention of 1907, signed by Germany, which forbids a belligerent to compel the subjects of a hostile party to take part in military operations against their own country.

" Other Nazi violations of The Hague Convention in Poland include the invasion of that country without notice, the bombing of non-military objectives in undefended towns, and the eviction of Poles from their property without compensation.

" This record affords sufficient commentary on the claim of the German radio, ' We brought our swords back clean from Poland.' "

SWITZERLAND

The whole Swiss Army has been called up, including frontier guards, Territorials, and auxiliary units, and a force of about 650,000 men, of whom 480,000 are combatants, is mobilised. This represents nearly 24 per cent. of the male population, and is a much higher proportion than was expected. All men born after 1899 who had previously not been recruited for active service are now undergoing a new medical examination, and from 50 to 60 per cent. of them are enrolled for active service, for anti-aircraft defence, or for taking the places of fighting men in the auxiliary services.

The young men between 18 and 20 who are now called up will add another 25,000 men at least, as 70 per cent. of those examined—in certain mountain districts all—have been found fit for active service. When some older classes have been temporarily dismissed there will remain about 525,000 men at the disposal of the Army Command, exclusive of auxiliary detachments.

According to *The Times*, the possibility of a German break-through in Switzerland has been examined both by the German and the French General Staffs, and they agree approximately on the time it would take to force the Swiss defences and cross the country. The Germans estimate that time at 40 days, the French at 37 days. The Germans, it is said, are of opinion that it would be necessary to oppose five German divisions to one Swiss to achieve that result.

AIR NOTES

ROYAL AIR FORCE

H.M. The King

During his visit to France, from 4th to 10th December, the King personally inspected units of the Royal Air Force. On 5th December, His Majesty stopped at an aerodrome where Air Vice-Marshal Sir Charles Blount, who commands the air component under the direct orders of the Commander-in-Chief, British Expeditionary Force, showed him the principal points of interest. On 8th December, he visited other units of the Force, including a stores park, the operations room at a wing headquarters, and an A.A. battery. He also conferred decorations at a bomber aerodrome. On the conclusion of his visit, he sent the following message to Air Vice-Marshal P. H. L. Playfair, Air Officer Commanding the R.A.F. in France:—

> "Please assure all ranks of the R.A.F. units in France of the pleasure which it gave me to pay them a visit to gain an insight into some of their activities. I was greatly impressed as well as interested by all that I saw, and I shall be glad if you will convey my best wishes to all ranks of the force under your command."

On 2nd November, the King returned to London from a visit to R.A.F. units in the North of England, during which he conferred decorations.

On 20th October, the King, accompanied by H.M. the Queen, visited balloon sites in various parts of London.

The Air Council

It was announced on 5th November that the King had approved the promotion of Air Vice-Marshal R. E. C. Peirse, C.B., D.S.O., A.F.C., the Deputy Chief of the Air Staff, to be acting Air Marshal on his appointment as an additional member of the Air Council. He is the second additional member to be appointed since the outbreak of war to the Council, which now includes :—

Sir Kingsley Wood, M.P., Secretary of State for Air.
Captain H. H. Balfour, M.P., Parliamentary Under-Secretary.
Air Chief Marshal Sir Cyril Newall, Chief of the Air Staff.
Air Marshal C. F. A. Portal, Air Member for Personnel.
Air Marshal Sir Wilfred Freeman, Air Member for Development and Production.
Air Marshal Sir C. L. Courtney, Air Member for Supply and Organisation.
Air Marshal R. E. C. Peirse, Deputy Chief of the Air Staff.
Mr. E. J. H. Lemon, Director-General of Production.
Sir Harold Howitt, F.C.A.
Sir Arthur Street, Permanent Under-Secretary of State.

Director-General of Maintenance.—The Secretary of State for Air has appointed Viscount Nuffield to be Director-General of Maintenance in the Air Ministry. Lord Nuffield will be responsible to the Air Council, through the Air Member for Supply and Organisation, for the organisation that has been established and is in course of rapid expansion for the repair of aircraft and ancillary

equipment of the R.A.F. He will also exercise general supervision, under the Air Member for Supply and Organisation, of the supply services of the R.A.F. with a view to their co-ordination with the repair services. Lord Nuffield will be assisted by Mr. Oliver Boden, who has been appointed Deputy Director-General. Both Lord Nuffield and Mr. Boden have undertaken to discharge their offices without remuneration of any kind.

AIR COUNCIL DUTIES.—Duties of members of the Air Council were defined in an Order in Council published in the *London Gazette* on 31st October. Four members are to be responsible to the Air Minister for the command, disposition, organization, personnel, training, equipment, armament and maintenance of the Air Force. these are :—

The Chief of the Air Staff, Air Chief Marshal Sir Cyril Newall, First and Senior Air Member of Council and principal adviser of the Air Minister in the direction of the Force ;

The Air Member for Personnel, Air Marshal C. F. A. Portal ;

The Air Member for Development and Production, Air Marshal Sir Wilfred Freeman ; and

The Air Member for Supply and Organization, Air Marshal W. L. Welsh.

The Parliamentary Under-Secretary of State for Air, Captain H. H. Balfour, who is Vice-President of the Council, will be responsible for business assigned to him by the Minister.

The Permanent Under-Secretary of State for Air, Sir Arthur Street, will be responsible for financial advice and will also be designated Secretary of the Council.

Subject to these provisions, the Council's powers may be exercised by any three members and notwithstanding that any office, the holder of which is a member of the Council, is temporarily vacant, provided, however, that documents may be signed on the Council's behalf by any two members of the Council.

APPOINTMENTS

The Air Ministry announced on 9th January that Air Marshal A. S. Barratt, C.B., C.M.G., M.C., had been appointed Air Officer Commanding-in-Chief, British Air Forces in France, and would shortly assume his duties.

The following appointments, to take effect in the near future, were announced on 12th January :—

Air Marshal Sir Christopher L. Courtney, K.C.B., C.B.E., D.S.O., to be Air Member for Supply and Organisation on the Air Council, *vice* Air Vice-Marshal (acting Air Marshal) W. L. Welsh.

Air Marshal William L. Welsh, C.B., D.S.O., A.F.C., to be Air Officer Commanding No. 11 Group, *vice* Air Vice-Marshal E. L. Gossage.

Air Vice-Marshal Ernest L. Gossage, C.B., C.V.O., D.S.O., M.C., to be an Inspector General of the Royal Air Force, *vice* Air Marshal (acting Air Chief Marshal) Sir Charles S. Burnett.
Flying Officer R. C. Graveley.

PROMOTIONS

The following Air Vice-Marshals were granted the acting rank of Air Marshal, to date 3rd September : C. F. A. Portal, C.B., D.S.O., M.C., and W. L. Welsh, C.B., D.S.C., A.F.C.

The following Air Commodores were granted the acting rank of Air Vice-Marshal, to date 3rd September: C. D. Breese, C.B., A.F.C., H. V. Champion de Crespigny, M.C., D.F.C., F. J. Linnell, O.B.E., R. G. Parry, D.S.O., A. A. Walser, M.C., D.F.C., and A. C. Wright, A.F.C.

Group Captain R. L. G. Marix, D.S.O., has been granted the acting rank of Air Vice-Marshal, to date 3rd September.

The following Air Marshals were promoted to the temporary rank of Air Chief Marshal, to date 1st November: Sir Arthur M. Longmore, K.C.B., D.S.O., and Sir Frederick W. Bowhill, K.C.B., C.M.G., D.S.O.

Air Commodore H. G. Smart, O.B.E., D.F.C., A.F.C., has been granted the acting rank of Air Vice-Marshal, unpaid, to date 23rd November.

Honours and Awards

His Majesty the King has been graciously pleased to approve the following awards:—

Distinguished Flying Cross.—Squadron Leader P. R. Barwell; Flight Lieutenants Patrick Gifford, Auxiliary Air Force, and G. C. Pinkerton, Auxiliary Air Force; Flying Officers (acting Flight Lieutenants) T. M. Wetherall Smith, J. Barrett.

Medal of the Military Division of the Order of the British Empire.—Flying Officer R. C. Graveley.

The first man in the R.A.F. to be honoured by the French was Sergeant Observer J. Vickers, of Birmingham, who has since died in a French military hospital. Vickers, a member of a bomber squadron, was the observer in a machine in action with a German Messerschmitt fighter on 27th September. The fighter was shot down, but Vickers was badly wounded, although he carried on with his navigation and helped the pilot to make a safe landing. While in hospital, he received the French Military Medal from General Frere, G.O.C., French 8th Army Corps.

Palestine Medal.—The King has commanded that the General Service Medal with clasp "Palestine" shall be granted to the forces employed in Palestine or Transjordan between 19th April, 1936, and 3rd September, 1939. Officers no longer serving may obtain a form of application from the Under-Secretary of State, Air Ministry, Kingsway, W.C. 2, and airmen no longer serving from the Officer-in-Charge, Record Office, R.A.F., Ruislip, Middlesex.

General.

Visits to France.—Following a meeting in France with M. Guy La Chambre, the French Air Minister, Sir Kingsley Wood said that complete agreement had been reached on the many points discussed. Sir Kingsley visited Air Headquarters, wings and a number of squadrons in the field, together with maintenance units, and said afterwards: "I am confident that experience will show that the high expectations that we formed of our men and our aircraft will be fully realised, if not exceeded."

Air Chief Marshal Sir Cyril Newall, Chief of the Air Staff, also visited R.A.F. units in France in December, and in an interview he said: "I have talked to many people, and, as I expected, they have their tails right up. . . . The R.A.F. here have learned a lot of lessons through the successful contacts they have had with the enemy. The possibilities of our fighters have been clearly demonstrated.

There is no doubt that when our Spitfires or Hurricanes go into action they make enemy aircraft resemble colanders. The eight-gun fighter has fully come up to expectation. Bomber reconnaissance aircraft, in spite of opposition, have completed their missions over enemy territory most successfully. What was most satisfactory was that the proportion of serviceability among these aircraft was so high. They had been standing out in the open for three months in all sorts of weather conditions. It was a magnificent tribute to the material in our aircraft and the skill of the manufacturers. Those men who maintained the aircraft, the ground staffs, also deserved every credit for their fine work."

SUPERIORITY IN AIR FIGHTING.—During the first three-and-a-half months of war, not a single British fighter aircraft was shot down in the United Kingdom. Yet R.A.F. Fighter Command aircraft had brought down nearly half the German bomber and reconnaissance aircraft engaged by them during the first two active months of the war. In 51 engagements over British land or sea during October and November, 21 German raiders were destroyed. Of these, 13 were seen to strike the ground or water. It is also known that many more failed to return to Germany. In all these engagements, only one British pilot was wounded, and that slightly. This record is the more impressive when it is recalled that in fighting between British bombers and German fighters, five Messerschmitts were shot down in flames during the air battle over the Friesian Islands on 14th December, and more than twelve during the action over Heligoland on 18th December.

Most of the engagements by our Hurricanes and Spitfires have been against single raiders. It is much more difficult to gain results in this type of combat, especially where, as has frequently happened, cloud and poor visibility help the enemy. The Messerschmitts, on the other hand, have several times had considerable numbers of British bombers as their target. The safe return of the twelve British long-range fighters after their successful attack on German minelaying seaplanes at Borkum on 28th November was also a notable performance.

REVIEW OF THE WAR.—In the House of Commons on 12th December, Sir Kingsley Wood reviewed what he described as the second chapter of the war in the air, beginning with the enemy raid on warships in the Firth of Forth on 16th October. Following are points from his speech :

"We had new and more powerful types of aircraft which had already flown and would shortly be able to operate against the enemy. Our whole defence organisation, under unified control, could be adapted and adjusted to the exigencies and requirements of any moment and circumstance.

"The work of the Coastal Command had been marked by magnificent courage and skill in escorting convoys. Our aircraft had on many occasions encountered and shot down enemy machines, and had attacked submarines on 57 occasions, causing in 19 cases substantial damage.

"Our Hurricanes and Spitfires were definitely superior to the German fighters. Not only have they twice the gun-power of the Messerschmitt, but they have markedly better flying characteristics and are superior both in control and manœuvrability at high speeds.

"Reconnaissances over Germany had continued, and our aircraft had visited Hamburg, Bremen, the Ruhr, Berlin, Munich and Nurnberg in succession, and in many cases on more than one occasion."

After referring to the co-operation of the Dominions (mentioned elsewhere), Sir Kingsley Wood said that arrangements had been made for certain Polish squadrons to be reformed in this country under the command of Polish officers. The first detachment of Polish airmen had already arrived.

The numerical output of aircraft is more than twice what it was a year ago, and the new types represent not a twofold but a manifold accretion of strength.

PIGEON SERVICE—The King has accepted the badge of the National Pigeon Service established under the direction of the Air Ministry. From the Royal lofts at Sandringham the King's birds are daily sent out on war service, and important messages have been received by their aid.

BARRAGE BALLOONS AFLOAT.—Barrage balloons flown from small ships have been instituted as an additional defence against low-flying aircraft engaged in minelaying off certain ports and estuaries. Crews for the balloons are provided, as on land, from R.A.F. personnel.

AIRCRAFT FROM AMERICA.—A telegram to *The Times*, from its New York Correspondent, dated 21st November, stated that the Lockheed Aircraft Corporation was completing that week, seven-and-a-half weeks ahead of the contract date, the last of the 250 Hudson reconnaissance bombers ordered in June, 1938, by the Air Ministry. They have been built at the rate of six a week, the first machines having been delivered on 12th January. The company has since begun the production of 100 bombers of similar type for the Australian Government.

R.A.F. COMFORTS APPEAL.—The Royal Air Force Comforts Committee appeal to their helpers throughout the country to send woollen garments and other comforts to their headquarters at Berkeley Square House, Berkeley Square, W.1.

DOMINION FORCES

EMPIRE TRAINING SCHEME.—With the exception of South Africa, who prefers to train her own men, flying personnel from the Dominions will receive their advanced training for active service in Canada under a comprehensive scheme agreed to between the home and Dominion governments. A mission from England under Lord Riverdale went to Canada in October to meet corresponding missions from Australia and New Zealand, and to discuss with them and the Canadian authorities the plans for the rapid execution of the scheme. Air Chief Marshal Sir Robert Brooke-Popham arrived in Montreal on 13th November in connection with this undertaking, which was described by Sir Kingsley Wood as a great development which is destined to make a most effective contribution to the successful prosecution of the war.

An agreement for the new scheme was signed at Ottawa on 17th December; Lord Riverdale signed on behalf of the United Kingdom Government. In announcing this event, the Dominions Office and Air Ministry stated that the scheme is an outstanding example of Empire co-operation. Under it a great number of young men will be trained in Canada, Australia and New Zealand as pilots, observers, wireless operators and air gunners. A proportion of the young men from Australia and New Zealand will complete their training in their home countries; others will proceed to Canada for advanced training alongside the large numbers of young Canadians who will have received their elementary training in the Dominion. A number of young men from the United Kingdom will also proceed to the training schools in Canada. The organisation thus created will produce a steadily increasing output of trained airmen and is destined to play a decisive part in the achievement of victory.

Australia was represented during the negotiations by Mr. Fairbairn, the Commonwealth Air Minister, and New Zealand by her Chief of the Air Staff, Group Captain Saunders.

The bulk of the aircraft required will be provided by the United Kingdom, but each Dominion will contribute locally-made aircraft to an increasing extent from its own resources.

The administration of the joint training programme in Canada will be carried out by the Canadian Government. The organisation and executive command of the training schools in Canada will be entrusted to the Royal Canadian Air Force. A Supervisory Board, under the chairmanship of the Canadian Minister of National Defence, will be established in Canada to supervise financial administration and progress.

DOMINION DELEGATES.—Ministers from the Dominions and India who had arrived in London for consultation with the Home Government visited Headquarters of the Fighter Command on 4th November, and were shown the central control room. Later the ministers visited other R.A.F. centres, and also units in France. During their visit to Coastal Command Headquarters, they were shown actual messages which came in reporting the progress of an attack on an enemy submarine by patrolling aircraft.

AUSTRALIA

COMMAND OF THE ROYAL AUSTRALIAN AIR FORCE.—Air Marshal Sir Charles Burnett, Inspector-General of the R.A.F. is to take charge of the Royal Australian Air Force.

SQUADRON IN GREAT BRITAIN.—In addition to providing an Air Expeditionary Force, the offer of which was announced by Mr. Menzies on 20th September, Australia has agreed to maintain a full R.A.A.F. squadron of flying-boats for reconnaissance duties with the R.A.F. in the United Kingdom. The Commonwealth Government had ordered several " Sunderland " flying-boats before the War, and personnel had been sent to England to fly them to Australia. They have been placed instead at the disposal of the United Kingdom Government, and will form a complete squadron for active service with the Coastal Command. Australia will thus be the first Dominion to have a complete unit of its own Air Force in service in the European theatre of war.

CANADA

SQUADRON IN R.A.F.—In due course, squadrons of the Royal Canadian Air Force will be playing their part in active air operations in Europe. Meanwhile, the Canadian Government have suggested that a squadron should be formed from Canadian personnel already serving in the R.A.F. The Air Council have readily agreed, and a new fighter squadron has been formed from Canadian personnel drafted from other units. The Squadron Leader is an officer of the R.C.A.F. All the pilots are Canadian. The squadron took its place in the air defence of Great Britain in December.

NEW ZEALAND

SQUADRON IN R.A.F.—On 7th December, the Air Ministry announced that before the war a mobile flight consisting of a number of officers and airmen of the Royal New Zealand Air Force was forming in the United Kingdom to take over some of the " Wellington " bomber aircraft which the New Zealand Government

had ordered, and to fly these aircraft to New Zealand. Immediately war was declared, the Government of New Zealand readily placed these officers and airmen, together with the aircraft, at the disposal of the United Kingdom Government. The question of forming a New Zealand squadron in the Royal Air Force is now being actively considered.

INDIA

GIFT OF FIGHTER SQUADRON.—A gift of £100,000 to the Royal Air Force by the Nizam of Hyderabad has been used to form a new fighter squadron. This is the second time in twenty years that a squadron of the R.A.F. has borne his name. Pilots from Britain and nearly all the Dominions are in the newly-formed unit. The Nizam of Hyderabad has not only borne the cost of the aircraft but is also paying for their maintenance.

INDIAN VOLUNTEER RESERVE.—Authority has been given for the creation of a permanent Indian Air Force Volunteer Reserve. Five independent flights are to be stationed at Karachi, Bombay, Madras, Calcutta and Delhi.

FOREIGN COUNTRIES

FINLAND

The Times Correspondent reports that 16 of the 44 Brewster fighting aeroplanes which are being built in the United States for the Finnish Government have now been completed and are awaiting shipment. They are part of an order which was relinquished by the United States Navy in favour of Finland.

The machines are single-seater monoplanes and are capable of a speed of more than 300 miles an hour. They mount four machine guns, two of which are in the wings and two are synchronized to fire through the airscrew. The cost of the machines is about $60,000 each.

GERMANY

A feature of some recent British flights over enemy territory has been the failure of German Messerschmitt 109 four-gun fighters to engage British bombers. In one raid on German warships off Heligoland, only two out of twenty German fighters sighted attempted to attack the British bombers. Both were driven off by the bombers' fire, and one was shot down. This attitude contrasts with that of British eight-gun fighters, which invariably engage German bombers and reconnaissance machines. It is evidence of the reported distrust which the German pilots have in their Messerschmitts when confronted by a highly manœuvrable and well-armed bomber.

In the recent actions over the Heligoland Bight, on 18th December, and over the North Sea on 2nd January, the Germans employed their new twin-engined fighter. This is armed with two shell-guns in addition to four machine guns, and is some 20 m.p.h. faster than the single-engine version. Although on these occasions the enemy fighters attacked the British formations in force, they suffered heavy losses, at least fifteen being shot down by British bombers.

It is significant that twice as many German fighters have been destroyed in France as any other type of enemy aircraft. So far not a single British fighter —Vickers Spitfire, Hawker Hurricane or Gloster Gladiator—has been shot down by German bomber aircraft.

IRAQ

The *Aeroplane* reports that Iraq has ordered fifteen Douglas attack bombers, to cost about £250,000. A military mission from Iraq, which visited England, has been in the United States and was expected to buy American machines, as orders could not be fulfilled in England. Previously Iraq has nearly always bought British machines.

POLAND

The first detachment of the Polish Air Force is training somewhere in England. It will provide the first of several squadrons to become part of the R.A.F.

Many of the officers and men arrived in this country after alarming experiences, with practically no money and very little clothing, but now this first detachment are wearing with great pride the uniform of the R.A.F. The only distinguishing marks will be a difference in the cap badge and the Polish eagle in gold on the left pocket of the tunic.

These Polish squadrons will be entirely self-supporting—that is, not only will pilots, observers, gunners and wireless operators be found for the air crews, but also the maintenance of the aircraft will be undertaken by Polish personnel. Several of them speak English already, but the others are working incessantly to get at least a smattering of the language.

RUMANIA

Thirty-six Blenheim bomber aircraft were recently delivered by air from Great Britain to Rumania. All arrived in Bucharest.

Some time ago, a senior Rumanian Officer and twelve pilots arrived in England to take delivery of the first consignment of Blenheims; late in October a second batch of pilots arrived and flew the second consignment of fourteen to Rumania. Ten days later, the same pilots came back and flew home the last consignment.

The Rumanian Air Force will form three squadrons from these Blenheims.

SWEDEN

Sweden has recently taken over a number of Heinkel He. 115 seaplanes, and is building Junkers Ju. 86 K., bombers under licence. It is also reported that an order for 80 service aircraft of different types has been placed in the United States.

REVIEWS OF BOOKS

GENERAL

The American War of Independence in Perspective. By Lieut.-General Sir George MacMunn, K.C.B., K.C.S.I., D.S.O. (G. Bell & Sons). 13s.

The traditional Whig version of the War of Independence must by this time be nearly dead, and "the bulk of American historians now hold that the actual case for rebellion was small." It has therefore been easy for Sir George MacMunn to prove that the war was unnecessary. He makes a strong point in laying emphasis on Pontiac's War, which proved that the impotence of the Colonies to defend themselves against Indian attack required the maintenance of a British force in America for their protection. The majority of Americans did not wish to cut loose from the Empire. Had there been any "machinery whereby the better and wiser portion of American opinion could make itself felt," the differences might have been reconciled. The demand for independence came from a factious minority, mainly recruited from the lower classes, who haunted the drinking-shops on the Boston wharfs, and who headed by Samuel Adams, anticipated the Bolshevik method of establishing "cells" for the spread of revolutionary propaganda. It was the unprovoked invasion of Canada by New England forces in the latter half of 1775 which rendered war inevitable.

General MacMunn's description of the military and naval operations, with its side references to parallel cases in recent wars, could hardly be bettered; of special interest is his review of Cornwallis's campaign in the Carolinas.

The British soldier emerges from the struggle with his fighting reputation untarnished. The American victories at King's Mountain and Cowpens were won over loyalist corps under British commanders. After Saratoga, Howe and Clinton could still have brought American resistance to an end, had not France intervened. Even after Yorktown the British could still have prosecuted the war with a good hope of wearing down resistance; for by that date "the larger portion of the British forces were American in personnel; the American forces were largely British and German deserters or renegade prisoners of war." He exonerates the British generals of responsibility for these two disasters. For Saratoga he places the blame almost entirely upon Lord George Germaine, because he did not give direct instructions to Howe to co-operate with Burgoyne; he suggests, however, that if Howe had risen to the height of the occasion, he should, upon receipt of Germaine's letter of 18th May, have abandoned the Philadelphia expedition and transported his army to New York. He also holds Germaine partly responsible for the Yorktown capitulation on the ground that he was encouraging Cornwallis to assume a semi-independent attitude towards his superior, Clinton.

Sir George should not have failed to warn the reader against identifying General Charles Lee of Monmouth Court House ill-fame with "Light Horse Harry" Lee, (father of the famous Confederate), the brilliant partisan leader in South Carolina; nor should he have allowed himself to write such a sentence as "Cornwallis may have lost some of the instinctive loyalty towards his superior that the taint of politics may engender in soldiers and sailors." Sir John Hawkins's third voyage is postdated by a century.

Nazi Germany Can't Win. By Dr. Wilhelm Necker. (Lindsay Drummond, Ltd.). 10s. 6d.

Dr. Necker's book is one of those compilations which, in recent years, have thriven upon the claim to present a first hand view from original German sources of the military and economic plans and preparations of the Nazi regime. Unfortunately the selection of extracts from party, economic, and military periodicals around which he weaves his own considerations is neither comprehensive, nor representative; moreover many of them have already done duty in numerous other books and articles. General von Metzsch, a most notorious windbag and hence the most widely quoted amongst retired senior officers of the German Army, is quoted no less than twenty-six times, whereas the really representative German military writers are mainly conspicuous by their absence, and that in a study devoted to a large extent to the Third Reich's economic preparation for war—the all decisive factor. The famous *Wehrwirtschaftsamt* appears just once in a casual observation; its dominating personality, General Thomas, and his right hand man, von Hanneken, not at all; while their academic and journalistic "figleaf," Lieut.-Colonel Hesse, is quoted no less than six times.

Small wonder then that this picture of Nazi Germany's preparation for the present struggle is very inadequate. A very superficial sketch of Hitler's rise to power—in which Dr. Necker actually manages to confuse the events of 1930 with those of 1932 is followed by a more detailed account of the economic organisation of Germany for war both in the agricultural and the industrial sphere; but this ignores all that has not been set down in print in favour of most that has. The result is that all the real factors and issues—the *Wehrwirtschaftsamt*, its origin, its role in the economic organization of Germany for war, its general policy and the changes in that policy, the outstanding problems with which it had to deal, the methods by which it overcame them, its relationship to the Four Years Plan—are systematically left out. On the other hand, Dr. Necker presents us with an Agricultural Four Years Plan of his own invention and with long and pointless extracts from the propaganda literature of the Agricultural Organization; he discusses the German food and butter problem in blissful ignorance of the fact that we are lucky to possess on the German fat problem a model study by one of the few outstanding military economists in Germany; he completely overlooks such a highly important development as the use of soya bean products in the German fighting Services' food; and he concludes with the truly startling observation "that German authorities reckon with a short war," which is not correct in the purely strategic and simply nonsense in the sphere of economic preparation.

Part III, "Nazi Strategy at Work" (almost wholly political), and Part IV, "Nazi Tactics at Work" (largely amateur strategy) show the same fundamental ignorance both of the most elementary publications as well as of the decisive issues. Even the fairly extensive discussion of German tank tactics, the only notable section on strictly military matters, entirely fails to bring out their peculiar characteristics.

The last part, Part V, "Germany's Fatal Weaknesses," is slightly better. In its first section, "Transport" the author finds himself at last upon ground well known to him, and the sections on the coal, iron and oil shortage are not too bad, although the almost complete absence of any statistics throughout the whole work—not all German statistics are cooked—is rather disconcerting.

The translation is indifferent, and the interpretation of German technical terms and designations not always lucky. The index is incomplete and unreliable.

Finland's War of Independence. By Lieut.-Colonel J. O. Hannula. (Faber & Faber). 12s. 6d.

Though this is the record of what would nowadays be classed as a " small war," yet the war's size is no true measure of its severity, or of the courage and endurance of those who waged it. This story of Finland's fight for freedom is the more moving, in that to-day it is being fought again, against the old " red " enemy.

The hero of the book is, rightly, the " White " C.-in.-C., General Baron Mannerheim, without whose inspired leadership, the " Independence Movement " would have succumbed to its two opponents—the Bolshevik Russian army of occupation, and the Finnish " reds " in league with it.

This extraordinary war lasted only four months; during this time General Mannerheim contrived to raise, from a handful of gendarmerie, an army of 30,000 sufficiently trained men. He armed his first contingents by surprising and disarming the Russian garrison in central Finland, and thus gained the initiative. Towards the end, the " White " Finns were only fighting their " red " brothers; the Russian forces had been withdrawn. German intervention (March, 1918), though it did not decide the contest, exacerbated it, and the scars of the fratricidal quarrel are scarcely healed ere the united nation is faced with a new, gigantic enemy.

To any military student, not wedded to the " Defensive " theory, this epic of a give-and-take tough war must be of deep interest. The author has an exceptional gift of clear exposition; the strategy of the " White " Commander is particularly well defined. The maps, if uncomfortably small, are adequate, and the illustrations excellent.

Gallantry. By Sir Arnold Wilson, M.P., and Captain J. H. F. McEwen, M.P. (Oxford University Press). 12s. 6d.

This book surveys the history of medals and decorations for heroism both in war and peace and covers the procedure adopted in foreign countries as well as in Great Britain and the Empire. A number of hitherto unpublished documents on the subject are included from the Windsor Archives. From the Service point of view, the chapter dealing with Foreign Orders of Gallantry is of peculiar interest for only few officers are aware of the regulations covering the grant of the Médaille Militaire and the Croix de Guerre in France or of the Cross of Honour in the German Reich.

Ranks and Medal Ribbons of the Fighting Services. (The Daily Mirror.) 6d.

This booklet of thirty-one pages contains a great deal of information on the distinguishing badges of rank and medal ribbons worn by the personnel of the three fighting Services. There is also a section on gorget patches and armlets worn by officers of the many branches of the Army Staff. The numerous coloured illustrations greatly add to its value as a useful guide.

There are, however, several omissions and inaccuracies. In referring to the V.C., no mention is made of the fact that the colour of the ribbon worn with this decoration in the Royal Navy is blue. It is also incorrect to say that " generally speaking the C.M.G. is awarded for diplomatic, Colonial or Dominion services." In the Great War of 1914–18 the majority of the substantive Colonels and Lieutenant-Colonels received this Order.

The booklet will be of great help, both to the general public and to many Service men in identifying the ranks of officers, and non-commissioned officers, as well as the efficiency and distinctive badges worn by the lower ranks.

NAVAL

Jane's Fighting Ships, 1939. Edited by Francis E. McMurtrie, A.I.N.A. (Sampson Low, Marston & Co., Ltd.). £2 12s. 6d.

Published in November of last year, the latest edition of this Annual, by means of interpolated notes, has been able to deal with some of the early incidents of the war, such as the losses of H.M. Ships " Royal Oak " and " Courageous," but, in the main, it simply presents the condition of the world's navies at the very outset of the Second German War.

No novelties are to be found in the descriptions of the battleship types now building for our own and foreign navies. Small plans are presented for the ships of the " King George V " class, but these diagrams add nothing to what is generally known about those vessels. Plans are given for two new aircraft carriers—the German " Graf Zeppelin " and the Japanese " Soryu," the latter being also illustrated from a photograph. Both these carrier-types show " island " superstructures on the starboard side of their flight decks—large in the German ship and small in the Japanese. It may be remarked here that three of the older carriers—our " Furious " and the Japanese " Amagi " and " Kaga "—have now all acquired " islands." From this it may be inferred that the controversy as to which is the better type of carrier—the " islanders " or the " flush-decker " has ended in favour of the former.

For heavy cruisers of the 10,000-ton, 8-in. gun type, we now have plans and photographs of two new species—the German " Hipper " class and the American " Wichita." The British " Belfasts," having attained completion, are promoted to photographic illustration, and constitute all that is new in heavy 6-in. gun cruisers. Particulars of projected 8,000-ton cruisers for the United States and Italian navies are given, but are too vague for the formation of any definite opinion on their merits. The American ships, however, seem to correspond very closely with our own " Fiji " class. A few lines of text briefly describe a brace of light cruisers, now building in Italy for the Royal Thaian Navy. The account is worth reading, because it shows what can be accomplished to-day on a displacement roughly equal to that of our old cruisers of the " D " class.

The single-funnel cult in destroyer types is exemplified by the new illustrations of the British " Javelins " and the units of the U.S.A. " Sims " class. A single funnel also suffices in the designs for new Norwegian and Danish torpedo-craft. On the other hand, views of the recently-completed Swedish " Malmo " and Yugoslav " Beograd " show that the two-funnel convention still has its adherents. Six destroyers were building or completing in British shipyards to the order of the Brazilian Government when war broke out. According to a note in the " Addenda " they have all been taken over for the Royal Navy. Warships which we acquired from foreign navies in the past often turned out to be misfits, when embodied in our fleets and flotillas. The Brazilian " Javarys " are, however, virtually duplicates of our own " Hero " class of destroyers, and should therefore adapt themselves easily to our own ways and needs.

There are two kinds of war vessel which, as yet, have not taken on any definite form. One is the so-called " aircraft tender." It commences with the little French " Peterel " of 60 tons, and runs through a gamut of sizes, up to the 8,625 tons of the new U.S. " Albemarle " and " Curtiss." Thereafter the aircraft tender seems to fade away and re-appear as the seaplane carrier. Another unstandardized type is the

anti-submarine vessel. Some navies elect to build very small, very fast, wooden-hulled, petrol-engined craft as an antidote to the submarine. Other navies have decided that steel-hulled, steam-driven patrol craft, ten times larger than the motor boat species, and only half as fast, are what is required. The purely naval type of mine-sweeper, however, shows some signs of consolidating itself into a definite standard pattern—a ship of 600 tons displacement, armed with two 4-in. guns and having a speed between 18 and 20 knots.

Of ships re-built, the sole and outstanding example is the re-constructed battle-cruiser " Renown." She is now listed with secondary armaments of eight 4.5-in. (dual purpose) and twelve 4-in. (30 calibre) guns. Plans and photographs also show that the " Hood " has undergone changes in her appearance and armament, but the alterations effected in her seem trivial when compared with the trans-formation, internal and external, achieved in the " Renown."

The latest edition of *Fighting Ships* is not a Book of Revelations ; it does not exhibit the details of any new warship type of outstanding originality. It may be that the general apprehension of approaching war made the naval authorities of the world reluctant to release the details of their most advanced designs. If this be so, then one can only say that events have justified their prudence. Still, all the old and high standards of this publication are well maintained in the latest version.

Blue Water and Green Fields. By Admiral Sir William James, K.C.B. (Methuen & Co., Ltd.). 8s. 6d.

Admiral James provides a thumb-nail review of his own book in the first sentence of the Introduction when he says that he has " endeavoured to give life and colour to certain aspects of our naval history, with the hope that they may touch a cord in those who regard naval history as dry stuff, and so lead them into a realm of romance, peopled with striking personalities." That being his object, the reader must agree that he has achieved it admirably in this delightful collection of studies and narratives. The JOURNAL has had the privilege of publishing " The Importance of Studying Naval History," " The Golden Moment," and " The Grasshoppers and the Oaks " ; but they are all well worth reading again ; and there is so much else from the same attractive pen.

Those of us who heard the chairman's speech at a certain Navy Club dinner will delight to see a very fine oration now given to a wider circle in a chapter entitled " The Spirit of Nelson." St. Vincent, Hawke, Kempenfelt, Rodney, Hood, are but a few of the numerous personalities the author brings to vivid life from the sombre pages of history. Yet he does not seem to be always drawing inspiration from the dim past, for he links the Navy and its commanders of those picturesque and romantic days with the Navy of steel, of torpedoes, turbines, mines and bombs, with its Fisher, Jellicoe, Beatty, and many more, fresh in our memories, to whom " the inextinguishable torch " was handed and who have since passed it on to those who are now being tested, as their fathers of old, in the fires of conflict.

From Blue Waters—deep and turbulent—Admiral James takes us to the peace and relaxation of those Green Fields which no one appreciates more than the sailor " home from the sea."

This is a book to have on the cabin shelf or in the office drawer at such a time as this ; to take up in a spare moment and find recreation or renewed inspiration.

MILITARY

Prelude to Victory. By Brigadier-General E. L. Spears. (Jonathan Cape) 18s.

General Spears's *Liaison* ended at the battle of the Marne, 1914. Passing over two-and-a-half years, he deals in his present volume with the early months of 1917—a period full of political and military excitement; the advent of General Nivelle: his plan; the attempt to subordinate Haig to him; the problem of the German retreat to the Hindenburg position; Nivelle's difficulties with his government and his Generals; the Battles of Arras; and the Nivelle offensive.

As in *Liaison*, to which his new work is in no way inferior, General Spears writes of his own personal adventures—including a visit to a reformatory for girls; of the battles, which he saw from various headquarters and often at closer range; and of the conferences. Accounts of the last he has pieced together from conversations with those who were present—notably the Calais Conference, where the attempt was made to reduce Haig's status, and after which Nivelle told M. Poincaré "that Lloyd George's object was, once he had got rid of Haig, to take command of the Franco-British forces himself"; and the President's strange conference with his ministers, the Commander-in-Chief and the Generals on the 6th April, ten days before Nivelle's battle.

During the period the author was liaison officer, not only with the French Tenth Army (General Duchêne—"an optimist without reason"), but also with the Group of Armies of the North (General Franchet d'Esperey, his old friend of 1914). As usual, he kept his eyes and ears open, so records many an amusing story, and sums up many French and British Generals.

History loses nothing of its drama in the way he writes it. *Liaison* ended on the note of Marshal Joffre's dramatic entreaty to Sir John French on the 5th September, 1914, to co-operate, "C'est la France qui vous supplie." The new book closes on the 16th April, 1917, with the Marshal, "just an old man brooding" in his cabin on the Atlantic, on his way to the United States, waiting for news of Nivelle's battle:

"In the evening the communiqués were brought down to him. The German one gloated over the successful resistance of the defence, announced the capture of many prisoners. He turned to the French one; the words emphasizing the stubborn resistance of the enemy were on a model well-known to him . . . His expert eyes sought the essentials. Not a single village was mentioned. . . . no guns either. . . . The Marshal knew what it all meant; the attack had failed."

As a guide to the maintenance of good relations with our Allies, the book is invaluable and particularly deserving of study at this moment. He begs us remember: "Even knowing the French as I did, I never fully realized until the end of the war how irksome the presence of so many Allies on their soil was to them."

Mr. Winston Churchill contributes a preface; the selection of photographs, many from French sources, is excellent; and the appendices include many documents of interest.

Decisive Battles: Their Influence upon History and Civilisation. Vol. I. From Alexander the Great to Frederick the Great. By Major-General J. F. C. Fuller, C.B., C.B.E., D.S.O. (Eyre & Spottiswoode). 16s.

Though it is nearly ninety years since Creasy's *The Fifteen Decisive Battles of The World* was published, a comparison between his list and General Fuller's immediately suggests itself. Creasy's first two and last three battles fall outside the

limits laid down by General Fuller. Of the remainder six only are included by the later historian in his first volume, and after the Battle of Hastings only one—Blenheim—appears in both lists. The latter's selection is larger than Creasy's, including eighteen battles. This is partly due to the importance which he rightly attaches to the history of the Near East. Hadrianople, Manzikert, Hattin and the Fall of Constantinople all find a place. The first introduced the final stage of the long-drawn struggle between Rome and the Teutonic tribes; at Manzikert the Byzantine Empire lost to the Seljuk Turks its Asiatic Themes; at Hattin Saladin overthrew the Latin Kingdom of Jerusalem, and the capture of Constantinople created Turkey in Europe, rendered inevitable the schism between the Roman and Greek churches, and destroyed the civilisation of the Eastern Empire.

It must suffice to say that General Fuller has described his selected battles with admirable lucidity; the causes leading to them, the results which flowed from them, the theory and practice of the Art of War in the different stages are traced by a master hand. The successive links in the long chain of 2,000 years are supplied by synopses, which provide a panoramic view of world history. But this volume is far more than a manual of military history. It is written for the civilian reader also, and makes a special appeal to the philosophic mind. The author describes his method as substituting for the recognized divisions of history "periods named after the men who dreamed the dreams out of which each period awoke" and coupling "with their names the geographical quantity in which their dreams fructified." In this volume he treats of two such periods, the Alexandrian or Thalassic; and the Columbian or Oceanic. The first is the history of the nations and peoples dwelling round the Mediterranean. It begins with Alexander, and the idea, which lay behind his dreams of world-conquest, is that of Unity in Concord, an international world-empire, in which the peoples are fused together into "one universal similarity" and the Hellenistic culture pervades the whole. Caesar rather than Augustus is regarded as Alexander's spiritual heir; had he lived to conquer Parthia, he might have made Alexander's dream come true; Augustus, though "the first true world ruler" only established a Roman, not an international Empire. Ten centuries later the same idea of Unity in Concord stirred Gregory VII to dream of establishing a spiritual autocracy and uniting all Christendom under the will of the Pope.

The second period opens with the conquest of Grenada and the discovery of the New World, the latter simply an "extension in idea" of the former. Columbus was a true Crusader and his object to find a short cut, by which Islam could be assailed in rear with the help of a mythical Great Khan supposed to be well-disposed to Christianity. Throughout this period the idea of Unity in Concord was gradually degenerating into one of Unity through Force, of which Louis XIV and Frederick the Great were the chief exponents. The third period—the Napoleonic or Continental, will form the subject of the second volume, which will be eagerly awaited, whether the readers of the first accept or repudiate General Fuller's philosophy of history.

Napoleon and Wellington By Lieut.-Colonel Charles O. Head, D.S.O. (Hale, Ltd.). 10s. 6d.

This is a book for the advanced student who will thoroughly enjoy its many openings for agreement or disagreement with the author's uncompromising views. The work falls into two halves; the first of 135 pages consists of a careful and deliberate "de-bunking" if the popular phrase be allowed, of Napoleon; the second of some 150 pages can best be styled a glorification of Wellington.

Most of the defects, failings and impostures of Napoleon have all been stated or mercilessly exposed by numerous writers. Colonel Head has here assembled all the disparaging criticisms of him with a set purpose of showing that there was nothing good or worthy of praise, i.e. the process is drastic and may not find favour with every reader, even such as have read such a damaging biography as that of the historian Fournier. To claim, as is done on the dust cover of the book, that "Napoleonic doctrine was responsible for the French disasters in 1870" is surely overstating the case somewhat seriously; nor can this doctrine be held solely answerable for the mistaken French tactics in August, 1914.

The latter part of the book, dealing with Wellington, makes far more pleasant and instructive reading. This account of Wellington is such that it might readily be recommended to every beginner in military history who needs a short biography of the Iron Duke. Nevertheless, it is anything but elementary in its presentation and conclusion; thus there is an interesting little dissertation on the true purpose of the Peninsular campaign, and yet another as to the correct value of the battle of Salamanca.

Colonel Head has sought to effect too great a contrast between these two great historical figures. Perhaps he has been so far fascinated by the resemblance between Napoleon and Hitler, that he is prepared to class them together, yet between the charlatanism, ambition and demagogic gifts of the two the parallel will not stand being driven to an extreme.

Battle Training in Word and Picture. Edited by Major-General Rowan-Robinson, C.B., C.M.G., D.S.O., and Major H. A. Pollock, D.S.O. (George Newnes, Ltd.). 6d.

This publication is designed to interest company, platoon and section leaders and to help them to deal with the problems that arise in war.

General Lord Gort, Commander-in-Chief of the British Field Force, who has written the Foreword, expresses the hope that, by means of the pamphlet the young militiaman will be assisted to assimilate not only the elements of soldiering in the field but also something of the glorious traditions of the British soldier.

The booklet is profusely illustrated and is the first of a series which it is intended to issue periodically depending on the rate of sale.

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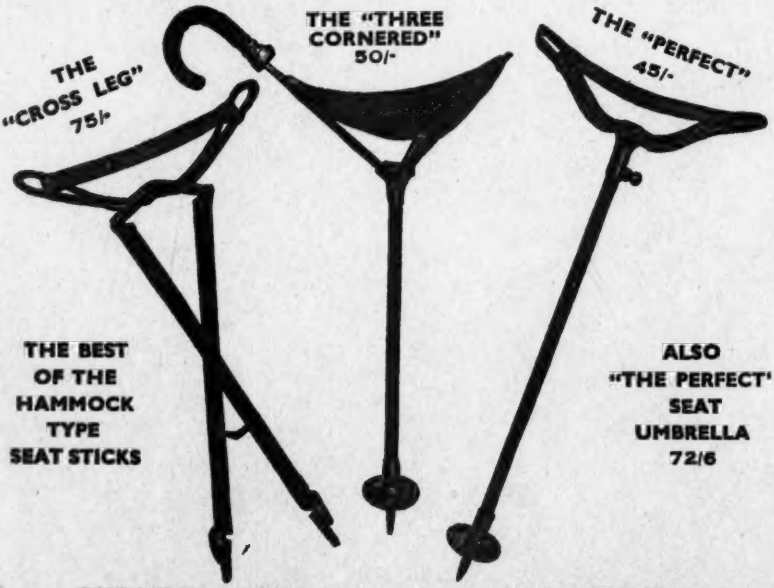

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